DOCUMENT RESUME

ED 284 963 CE 047 625

TITLE	Food of Consuming Interest.
INSTITUTION	Saskatchewan Consumer and Commercial Affairs, Regina. Education and Communications Branch.
PUB DATE	83
NOTE	130p.
AVAILABLE FROM	Saskatchewan Consumer and Commercial Affairs, Box 3000, Regina, Saskatchewan S4P 3V7, Canada ($10.00).
PUB TYPE	Guides - Classroom Use - Materials (For Learner) (051)
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	Adult Education; *Consumer Education; *Food; *Foods Instruction; Foreign Countries; Grains (Food); *Home Economics; Meat; *Nutrition; Secondary Education
IDENTIFIERS	*Canada

ABSTRACT

This guide is intended for use in a consumer education course designed to teach consumers to get the most out of their dollar when shopping for and preparing food. The kit is divided into a series of sections containing activities and fact sheets that are designed to guide the consumer through a successful shopping trip. The following topics are covered: the business of food (procedures for completing a one-day food record; Canada's Food Guide; and penny pincher ideas for use in purchasing and preparing bread and cereal products, meat and fish products, meat alternatives, fruits and vegetables, milk and milk products, and convenience foods); things to consider before going to the store (shopping lists, some food for thought, ways of stretching one's meat dollar, and alternatives to meat); the grocery store game (label talk, the food label game, prices, examples of grading, grades for canned fruits and vegetables, brand names and labeling games, no-name brands versus brand names, and a case for comparison); techniques for analyzing purchases (becoming a market master and buying food); and more ingredients (too much sugar, information on additives, common food additives and their use, salt and health, breakfast cereals, ways to use leftovers, fast foods, and food advertisements). (MN)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

Saskatchewan
Consumer and
Commercial
Affairs

Education and
Communications
Branch

Food of Consuming Interest

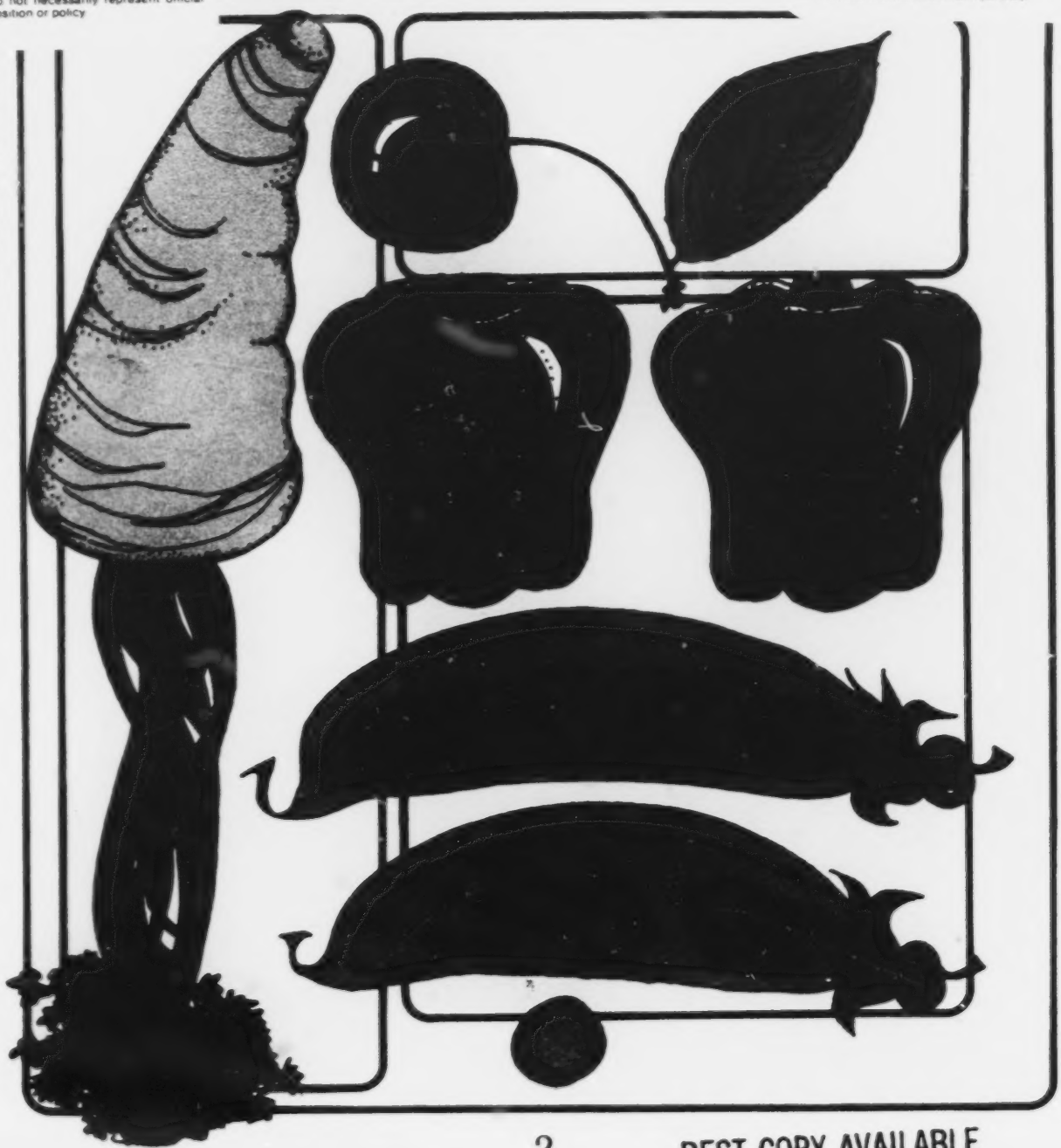
U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Sask. Consumer & Commercial Affairs
E Berg
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."



ED284963

CE047625

BEST COPY AVAILABLE

FOOD - OF CONSUMING INTEREST

TABLE OF CONTENTS

INTRODUCTION

SECTION I. THIS BUSINESS OF FOOD

1. Guide
2. One Day Food Record
3. Canada's Food Guide
4. Canada's Food Guide - Some Questions and Answers
5. Shopping Bag Game
6. Penny Pincher Ideas
   a) Bread and Cereal Products
   b) Meat, Fish, Poultry and Alternates
   c) Fruits and Vegetables
   d) Milk and Milk Products
   e) Convenience Foods

SECTION II. BEFORE YOU GO TO THE STORE

1. Guide
2. Before You Go to the Store
3. Making a List
4. Some Food for Thought
5. How to Stretch Your Meat Dollar
6. Alternatives to Meat

SECTION III. THE GROCERY STORE GAME

1. Guide
2. The Grocery Store Game
3. Label Talk
4. Every Label Tells a Story
5. The Food Label Game
6. The Price is Right
7. Examples of Grading
8. Grades for Canned Fruits and Vegetables
9. Brand Names and Labelling Games
10. No-Name or Brand Name?
11. A Case for Comparison

SECTION IV. CHECKING IT TWICE

1. Guide
2. Checking It Twice
3. Market Master
4. Tips for Buying Food or Bringing Home the Bacon

SECTION V. MORE INGREDIENTS

1. Guide
2. Too Much Sugar
3. Dispatch - Additives Information
4. A Glossary of Common Food Additives and Their Use
5. Salt and Your Health
6. Breakfast Cereal
7. Breakfast Cereals: The Real Sugar Bowl
8. Ways to Use Leftovers
9. Fast Foods Fact Sheet
10. If You Are What You Eat, Are You What You See on T.V.?

BIBLIOGRAPHY: Resources on Food Shopping

Answer keys have been supplied for some of the question sheets.

Saskatchewan Consumer and Commercial Affairs

1871 Smith Street
Regina S4P 3V7
Phone: 787-5550

224-4th Avenue South
Saskatoon S7K 2H6
Phone: 933-5725

800 Central Avenue
Prince Albert S6V 6Z2
Phone: 953-2211

Printed in 1982. Revised in 1983. Reprinted in 1985.

FOOD - OF CONSUMING INTEREST

Introduction

Getting value for your food dollar! A considerable task in this era of inflation, rising costs and shrinking incomes! In 1979 an average Canadian family of four spent approximately $3500 per year on food.[1] As of July, 1982, Agriculture Canada suggests the cost of a nutritious diet for a family of four will be $360.88 per month or approximately $4700 per year.[2] In a lifetime, an individual will likely spend $80,000 to $100,000 on food.[3] That's more money than some consumers will spend on a home! And if the rate of inflation continues to rise, consumers will likely pay even more for food.

SO HOW DO CONSUMERS GET VALUE FOR THEIR FOOD DOLLAR? Well, there is no easy answer . . . Getting value will take some time and energy. This food shopping kit FOOD OF CONSUMING INTEREST is designed to help consumers plan and research how they wish to spend their food dollar and devise a food shopping plan or strategy. Its aim is to assist consumers in getting value for their food dollar. If you already have a food shopping system that works well, you may find some new ideas or information to add to your existing plan. All of the ideas and tips included in the kit have been designed with an eye on consumers' pocketbooks and suggestions for pinching pennies are included.

The kit is divided into a series of sections containing activities and fact sheets which will guide the consumer through a successful food shopping trip.

Along the way, consumers will find some information and tips designed to further sharpen shopping skills.

For further information on food or food shopping contact:

Consumer Information Centre
Saskatchewan Consumer and Commercial Affairs
1871 Smith Street
Regina, Saskatchewan
S4P 3V7

Phone Number: 787-5578

A list of films, books and other information sources that you might find interesting and/or useful has been included in the Bibliography.

[1]Consumer and Corporate Affairs Canada, "Leader's Guide to Planning Your Food Dollar", Food Basics, 1979, p. 5.

[2]Regina Leader Post, "Food Prices Rise 10.5%" July 13, 1982, p. 2.

[3]Consumer and Corporate Affairs Canada, "Leader's Guide to Planning Your Food Dollar", Food Basics, 1979, p. 5.

CONTENTS OF SECTION I

1. Guide
2. One Day Food Record
3. Canada's Food Guide
4. Canada's Food Guide
   -Some Questions & Answers
5. Shopping Bag Game
6. Penny Pincher Ideas
   a) Bread and Cereal Products
   b) Meat, Fish, Poultry and Alternates
   c) Fruits and Vegetables
   d) Milk and Milk Products
   e) Convenience Foods

Eat a variety of foods from each group every day

milk and milk products

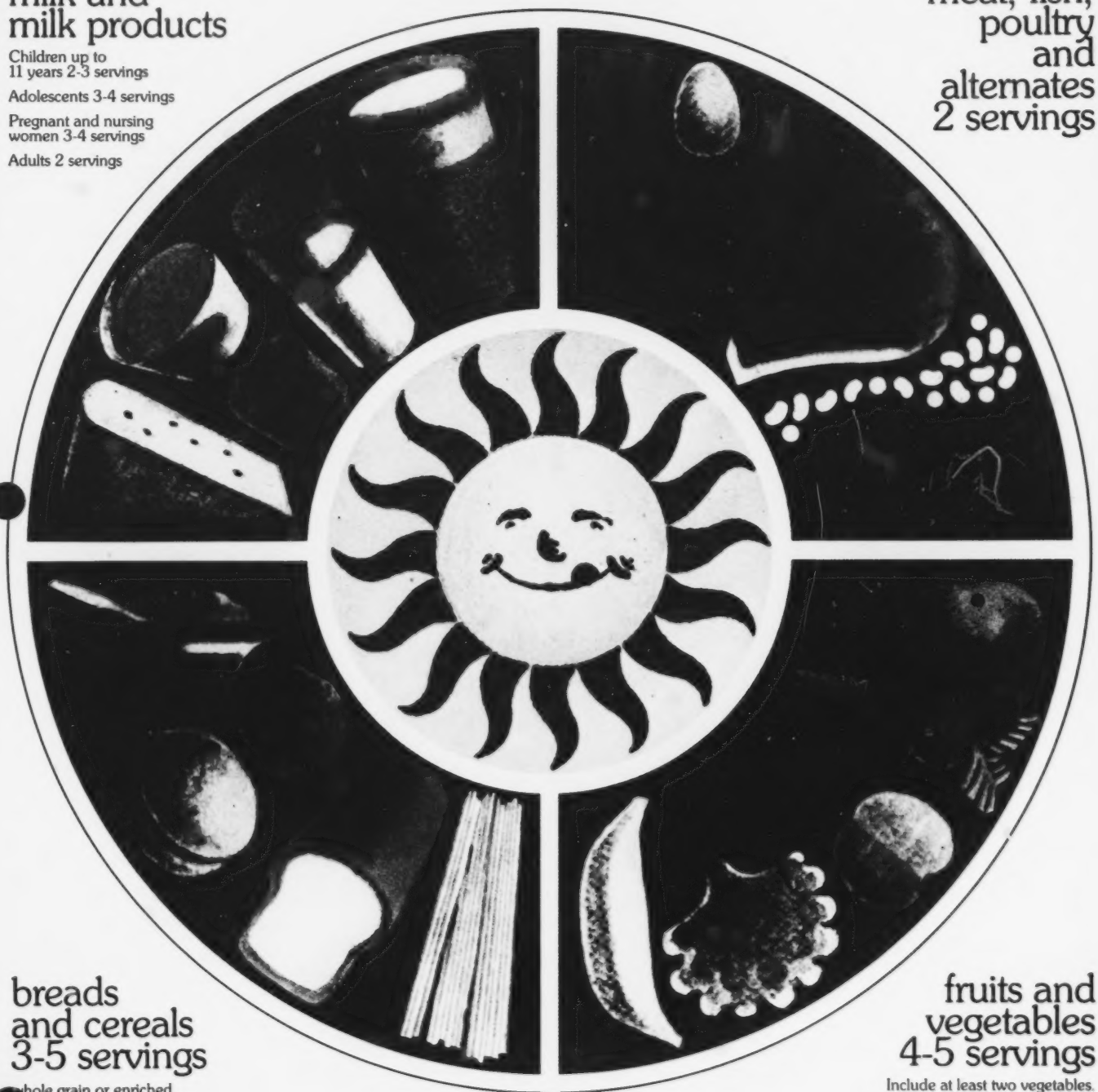
Children up to 11 years 2-3 servings

Adolescents 3-4 servings

Pregnant and nursing women 3-4 servings

Adults 2 servings

meat, fish, poultry and alternates 2 servings



breads and cereals 3-5 servings

Whole grain or enriched

fruits and vegetables 4-5 servings

Include at least two vegetables.

Health and Welfare Canada
Santé et Bien-être social Canada

© Minister of Supply and Services Canada 1983

Cat. No. H58-32/1983-2E

Canada

Variety

Choose different kinds of foods from within each group in appropriate numbers of servings and portion sizes.

Energy Balance

Needs vary with age, sex and activity. Balance energy intake from foods with energy output from physical activity to control weight. Foods selected according to the Guide can supply 4000 – 6000 kJ (kilojoules) (1000 – 1400 kilocalories). For additional energy, increase the number and size of servings from the various food groups and/or add other foods.

Moderation

Select and prepare foods with limited amounts of fat, sugar and salt. If alcohol is consumed, use limited amounts.

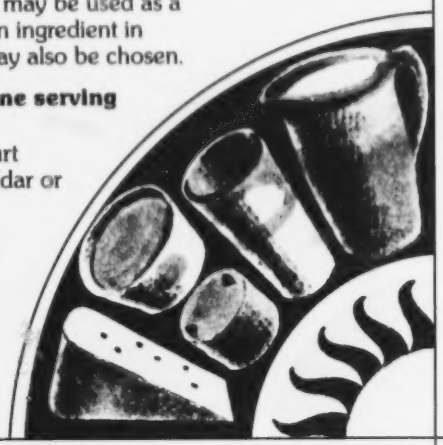
milk and milk products

Children up to 11 years	**2-3 servings**
Adolescents	**3-4 servings**
Pregnant and nursing women	**3-4 servings**
Adults	**2 servings**

Skim, 2%, whole, buttermilk, reconstituted dry or evaporated milk may be used as a beverage or as the main ingredient in other foods. Cheese may also be chosen.

Some examples of one serving
250 mL (1 cup) milk
175 mL (¾ cup) yoghurt
45 g (1½ ounces) cheddar or process cheese

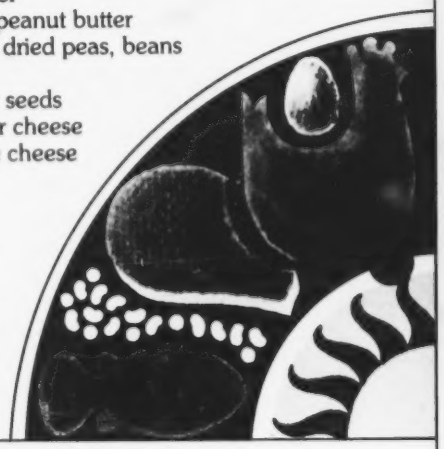
In addition, a supplement of vitamin D is recommended when milk is consumed which does not contain added vitamin D.



meat, fish, poultry and alternates

2 servings

Some examples of one serving
60 to 90 g (2–3 ounces) cooked lean meat, fish, poultry or liver
60 mL (4 tablespoons) peanut butter
250 mL (1 cup) cooked dried peas, beans or lentils
125 mL (½ cup) nuts or seeds
60 g (2 ounces) cheddar cheese
125 mL (½ cup) cottage cheese
2 eggs

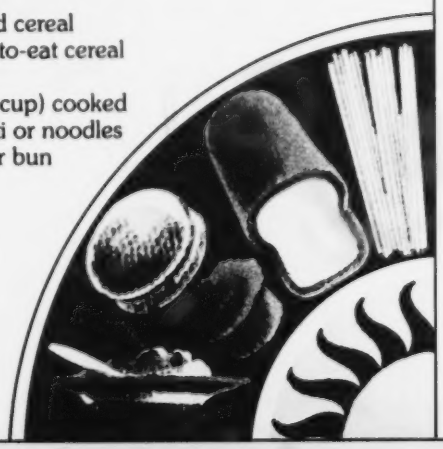


breads and cereals

3-5 servings

whole grain or enriched. Whole grain products are recommended.

Some examples of one serving
1 slice bread
125 mL (½ cup) cooked cereal
175 mL (¾ cup) ready-to-eat cereal
1 roll or muffin
125 to 175 mL (½ – ¾ cup) cooked rice, macaroni, spaghetti or noodles
½ hamburger or wiener bun



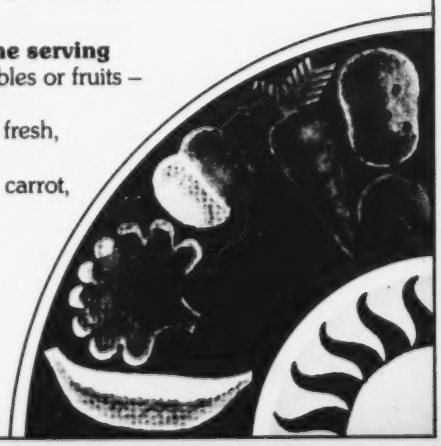
fruits and vegetables

4-5 servings

Include at least two vegetables.

Choose a variety of both vegetables and fruits — cooked, raw or their juices. Include yellow, green or green leafy vegetables.

Some examples of one serving
125 mL (½ cup) vegetables or fruits – fresh, frozen or canned
125 mL (½ cup) juice – fresh, frozen or canned
1 medium-sized potato, carrot, tomato, peach, apple, orange or banana



SECTION 1
THIS BUSINESS OF FOOD
Guide

Nutrition is an important factor to consider when buying food. Getting value for your food dollar does not necessarily mean buying the cheapest food available but rather buying the most nutrition possible for your money. This section "This Business Of Food" has been designed to help the consumer become familiar with Canada's Food Guide, an outline of the foods consumers should eat to stay healthy. "If consumers follow this simple guide and become familiar with the variety of foods available in each category, they will be sure to save money on unnecessary foods and provide interesting, nutritious meals."[1]

The first activity in this section "One Day Food Record" provides an opportunity for you to examine your present eating habits in terms of the daily nutritional requirements as outlined in Canada's Food Guide. If you have some further questions about the Guide, they may be answered in the information sheet "Canada's Food Guide - Some Questions and Answers". The next activity "The Shopping Bag Game" will assist you to become more familiar with the foods found in each of the four Food Groups in the Guide by asking you to classify foods typically found in most consumers' kitchens. A booklet of penny pinching tips for each of the Food Groups completes the section.

[1]Consumer and Corporate Affairs Canada, "Leader's Guide to Planning Your Food Dollar", Food Basics, 1979, p. 8.

ONE DAY FOOD RECORD

To determine if your present eating habits follow the basic nutritional requirements of Canada's Food Guide, complete the following activity.

INSTRUCTIONS

1) On the chart called "One Day Food Record Chart" list in the "Foods Eaten" column all the foods you ate and drank yesterday.

2) For each food check off (✓) the appropriate food group.

3) Total the number of foods eaten from each food group.

4) If you are not sure of the Food Group in which a food on your list should fit, check the copy of Canada's Food Guide included in this section.

5) The "Extras" column is for those foods which do not fit into a food group such as tea, coffee, honey, lemonade or jam.

6) An example of a meat alternate would include food items such as peanut butter, dried peas, beans, lentils, nuts or seeds, eggs, cheddar, process or cottage cheese. These foods are used as an alternate to a meat, fish or poultry product.

7) Then turn to the page called "Scoring Sheet For My Food Record" to score your eating habits.

ONE DAY FOOD RECORD CHART

FOODS EATEN	MILK & MILK PRODUCTS	MEAT, FISH, POULTRY AND ALTERNATES	FRUITS & VEGETABLES	BREAD & CEREALS	EXTRAS
BREAKFAST					
SNACK					
LUNCH					
SNACK					
DINNER					
SNACK					
TOTAL NUMBER OF FOODS EATEN FROM EACH GROUP					

TO CHECK WHETHER YOU HAD A NUTRITIONALLY BALANCED DAY USE THE FOOD SCORING SHEET FOUND ON THE NEXT PAGE.

SOURCE - The Ontario Milk Marketing Board - October, 1979

SCORING SHEET FOR MY FOOD RECORD

COUNT 1 POINT FOR EACH YES ANSWER

DID YOU

Eat . . . .

2 FOODS FROM THE MILK AND MILK PRODUCTS GROUP?

2 FOODS FROM THE MEAT, FISH, POULTRY AND ALTERNATES GROUP?

3 FOODS FROM THE BREAD AND CEREALS GROUP?

4 FOODS FROM THE FRUITS AND VEGETABLES GROUP?

AT REGULAR INTERVALS DURING THE DAY?

A NUTRITIOUS BREAKFAST? (1 food from the MILK group, FRUIT group, BREAD/CEREALS group and/or MEAT, FISH, POULTRY and ALTERNATES GROUP?

A VARIETY OF FOODS WITHIN EACH OF THE FOUR GROUPS?

A FRESH FRUIT OR VEGETABLE?

A WHOLE GRAIN FOOD?

MOSTLY NUTRITIOUS SNACKS? (for example: fresh vegetables, fruit, cheese, unsalted nuts, yogurt)

TOTAL SCORE
(Maximum 10 points)

WHAT CAN YOU LEARN FROM YOUR SCORE?

1. If your score shows that you are eating more or larger servings than recommended in the Guide you should be careful that you are not consuming more calories than you need. However, the suggested sizes are ranges and should and can be changed to suit your lifestyle.

2. If your score shows you are not eating food from all four Food Groups, you may not be eating a nutritionally balanced diet.

3. Breakfast is one of the most important meals of the day. It gives the body the food it needs to become active again after a night of rest. If you are having trouble getting started in the mornings it may be because you skipped breakfast or your breakfast is not supplying your body with the right kind of nutrients it needs.

4. The number, the kind and the timing of the meals you eat will depend upon your personal preference and lifestyle. However, it is suggested that meals be spread throughout the entire day so your body has a constant and continuous source of nourishment.

5. Whole grain foods such as whole wheat bread, rolled oats and bran flakes are high in fibre and thus aid in the elimination of body wastes. They also supply our bodies with other important nutrients such as protein, iron, B vitamins and carbohydrates.

6. Fruits and vegetables help control weight because they are usually low in calories. If weight control is a problem for you, you might try substituting fresh fruits and vegetables for the snack you now eat. As well, fruits and vegetables can sometimes be easier on the pocketbook than other kinds of high calorie snack foods.

7. Eating a variety of foods from each food group can make meals more interesting and attractive. As well, eating foods prepared in a variety of ways can add texture and color to the meal and make it a gourmet's delight.

CANADA'S FOOD GUIDE – Some Questions and Answers

1. WHAT IS CANADA'S FOOD GUIDE?

   Canada's Food Guide is a plan which has been designed to help individuals select and eat a variety of foods that will provide a nutritious diet. It is not a rigid set of rules but rather a means of meeting your nutrient needs by following a simple daily food pattern. It recommends the number of daily servings and sizes from four Food Groups: MILK and MILK PRODUCTS, BREADS and CEREALS, FRUITS and VEGETABLES, MEAT, FISH, POULTRY and ALTERNATES.

2. WHO CAN USE CANADA'S FOOD GUIDE?

   The Guide is designed for use by all Canadians except babies.

3. HOW CAN THE FOOD GUIDE WORK FOR NEARLY ALL AGES OF PEOPLE?

   Everyone, old or young, needs the same kind of nutrients. However, the amount of nutrients needed can differ. A thirteen year old boy should have 3 to 4 servings of milk a day while a sixty year old man should have 2 servings. Both people need the nutrients the milk provides, but the boy needs more because his body is still growing.

4. THE GUIDE GIVES EXAMPLES OF SIZES OF SERVINGS OF FOOD IN EACH GROUP. IS THAT ALL PEOPLE SHOULD EAT?

   No. The Guide is not a rigid set of rules. As its name suggests, it is just a guide. The serving sizes are given as examples only. If you are an office worker, you may not wish or need to eat as much as someone who works outside all day.

5. IF I AM ALLERGIC TO MILK, CAN I HAVE EXTRA SERVINGS OF FOOD FROM ANOTHER GROUP?

   No. The Food Groups each have their own important nutrients in the amount you need. One nutrient cannot do the job of another so you cannot substitute from one Food Group for food from another Food Group. If you have an allergy to a particular food, consult your doctor for special instructions.

6. DO I HAVE TO EAT SPECIAL FOODS TO FOLLOW CANADA'S FOOD GUIDE?

No. The Guide offers a wide variety of choices in each food group. The list of foods under each Food Group are examples only and could be greatly expanded. For example, the Guide suggests that you eat 2-3 ounces (60-90g) of cooked fish. Different kinds of fish are available in different parts of Canada. It would make sense to eat the fish that is the cheapest and easiest for you to obtain.

7. IS IT EXPENSIVE TO FOLLOW CANADA'S FOOD GUIDE?

No. If you choose the cheapest foods in each Food Group it is a very inexpensive food guide. Save money by shopping carefully and watching for specials or sales on certain foods that you like.

8. WHAT ABOUT FOODS LIKE STEWS, PIZZA, MACARONI and CHEESE, and HOME-MADE SOUP? THESE ARE VERY INEXPENSIVE FOODS TO MAKE BUT THEY ARE NOT INCLUDED IN ANY OF THE FOOD GROUPS. ARE THEY NUTRITIOUS FOODS TO EAT?

Yes. These foods are called "mixed dishes" and are foods which are combinations of two or more food groups. Stews, for example, combine foods from the MEAT, FISH, POULTRY and ALTERNATES group and from the FRUITS AND VEGETABLES GROUP.

9. IF I FOLLOW CANADA'S FOOD GUIDE DO I HAVE TO EAT THREE MEALS A DAY? CAN I HAVE SNACKS?

Canada's Food Guide suggests a range of servings of food to be eaten in a day. You must decide when you want to eat the food. You can snack all day long or perhaps eat 2 rather than 3 meals a day and still have a nutritionally balanced diet as long as you eat the recommended number of servings from each Food Group.

10. HOW CAN I FOLLOW CANADA'S FOOD GUIDE IF I WANT TO LOSE WEIGHT?

If you eat the serving sizes suggested in the Food Guide, you will be consuming approximately 1000 - 1400 calories per day. This is the amount of calories many diets allow you to consume. As well, you can keep your calorie intake low by eating the low calorie foods suggested in each group or by boiling, baking, or broiling your food instead of frying it.

Reference: Canada's Food Guide: A Hand Book

Shopping Bag Game

Knowledge of Canada's Food Guide is one way of making certain you are not only eating nutritious food but also getting value for your food dollar.

INSTRUCTIONS

1) Attached is an information sheet containing the name and ingredient listing of foods typically found in most consumers' kitchens.

2) Using the information provided on this sheet, classify each of these foods into their correct Food Groups. To do this, write the name of the food in the appropriate column on the chart called "Shopping Bag Game Chart". For example, Libby's Tomato Juice would fit into the FRUITS and VEGETABLES Food Group. You might like to check the ingredient listing before making your decision. A copy of Canada's Food Guide has been included to help you classify the food into its correct column.

3) The "Mixed Dishes" column is for those foods which are a combination of two or more Food Groups. For example, macaroni and cheese has food from the BREAD and CEREALS group and from the MILK and MILK PRODUCTS food group and thus fits into the "Mixed Dishes" column.

4) The "Other Foods" column is for those foods which do not fit into any other Food Group category.

5) After completing this activity you may wish to check your answers with the answer key for some further information.

NABISCO SHREDDED WHEAT

INGREDIENTS: 100% whole wheat - only the whole wheat kernel, B.H.T. is added to the package material to help maintain freshness.

CATELLI
MACARONI & CHEESE DINNER

INGREDIENTS: Macaroni product: seminola and/or flour, niacin, riboflavin and thiamine mononitrate.
Cheese Mix: cheddar cheese, whey powder, skim milk powder, hydrogenated coconut oil, salt, sodium phosphate, lactic acid, vegetable color.

O. K. ECONOMY
60% WHOLE WHEAT BREAD

INGREDIENTS: Whole wheat flour, enriched white flour, water, vegetable oil and beef shortening and/or lard, yeast, whey powder, salt, sugar, malt flour, sodium propionate, potassium, bromate, corn flour, monocalcium phosphate, L-cysteine, calcium sulphate, ammonium chloride.

NUTTY CLUB
PEANUT BUTTER

INGREDIENTS: 98% peanuts, 2% salt.

HIGH LINER
FLAKED WHITE TUNA

INGREDIENTS: Tuna, vegetable broth, salt.

HIGH LINER
FISH & CHIPS

INGREDIENTS: Potatoes, fish fillets, (specie as shown), wheat flour, corn flour, modified starch, sugar, salt, partially hydrogenated vegetable oil, whey powder, yeast, soy flour, baking powder, monoglyceride, dextrose, monosodium glutamate, polysorbate 60, spices, guargum, flavorings and fried in vegetable oil.

NEILSON
VANILLA ICE CREAM

INGREDIENTS: Ice cream mix: cream, sugar, milk solids, glucose, sodium alginate, mono and diglyceride, artificial flavour, gum guar, polysorbate 80, calcium sulphate, sodium phosphate.

CO-OP
PLAIN YOGURT

INGREDIENTS: Milk solids, gelatin, potassium sorbate, bacterial culture.

MAZOLA CORN OIL

INGREDIENTS: Corn oil, monoesopropyl citrate added to preserve freshness.

MALKIN'S PURE RASPBERRY JAM

INGREDIENTS: Sugar, raspberries, glucose, pectin, citric acid, vegetable oil.

LIBBY'S TOMATO JUICE

INGREDIENTS: Tomato juice and salt.

SEALTEST HOMOGENIZED MILK

INGREDIENTS: Milk, Vitamin D_3, 36 I.U. Vitamin D per 100 ml.

KRAFT CHEEZ WHIZ

INGREDIENTS: Milk solids, water, concentrated and/or powdered whey, whey butter and/or whey butter oil, bacterial culture, sodium phosphate, salt, mustard flour, rennet and/or pepsin and/or microbial enzyme, calcium chloride, flavorings, spices, sorbic acid, colour.

AYLMER FREESTONE PEACH HALVES
CANADA CHOICE

INGREDIENTS: Peaches, water, sugar, or sugar and glucose, heavy syrup.

CHEF BOYARDEE
COMPLETE SPAGHETTI DINNER WITH MEAT SAUCE

INGREDIENTS: Tomato puree, water, beef, sugar and/or dextrose, modified cornstarch, salt, onions, caramel and seasonings.

SEVEN FARMS CREAMERY BUTTER

INGREDIENTS: Butter, salt, may contain colour.

CREAMETTES MACARONI

INGREDIENTS: Semolina, flour, niacin, riboflavin, thiamine, mononitrate, reduced iron.

DEL MONTE SWEET PEAS
CANADA FANCY

INGREDIENTS: Peas, water, salt, sugar.

SHOPPING BAG GAME CHART

MILK and MILK PRODUCTS	BREADS and CEREALS	FRUITS and VEGETABLES	MEATS and ALTERNATES	MIXED DISHES	OTHER DISHES

SHOPPING BAG GAME - ANSWER KEY

When sorting the food into the six categories, the information on the label should be carefully considered. The ingredient listed first should decide the Food Group into which the food will fit.

1. MILK and MILK PRODUCTS

Kraft Cheez Whiz
Co-op Yogurt
Sealtest Homogenized Milk
Neilson's Vanilla Ice Cream

(Ice Cream is a member of the MILK group but it may be high in refined sugars).

2. BREADS and CEREALS

Creamettes Macaroni
O.K. Economy 60% Whole Wheat Bread
Nabisco Shredded Wheat

3. FRUITS and VEGETABLES

Libby's Tomato Juice
Del Monte Sweet Peas
Aylmer Freestone Peaches

4. MEAT, FISH, POULTRY and ALTERNATES

Kraft Cheez Whiz
Nutty Club Peanut Butter
High Liner Flaked White Tuna

(Depending upon the combination of food you eat, processed cheese can fit into the MILK and MILK PRODUCTS food group or the MEAT, FISH, POULTRY and ALTERNATES food group. Check Canada's Food Guide for the exact food combination needed).

5. MIXED DISHES

Many mixed dishes contain foods from two or more food groups. For

example, creamed salmon combines the MILK and MILK PRODUCTS food group and the MEAT, FISH, POULTRY and ALTERNATES food group).

Chef Boyardee Complete Spaghetti Dinner With Meat Sauce. (Combines the BREAD and CEREALS food group and the MEAT, FISH, POULTRY and ALTERNATES food group).

Catelli Macaroni and Cheese Dinner. (Combines the BREAD and CEREALS food group and the MEAT, FISH, POULTRY and ALTERNATES food group).

High Liner Fish and Chips. (Combines the FRUIT and VEGETABLES food group and the MEAT, FISH, POULTRY and ALTERNATES food group). There is some concern that chips do not belong in the FRUIT and VEGETABLES food group. By the time the potato has been processed into a chip, only a small amount of vitamin C remains.

6. OTHER FOODS

(Foods that are high in fats, oil, sugar or alcohol will fit into this category.

Mazola Corn Oil
Malkin's Pure Raspberry Jam (Sugar is listed first so this food cannot fit into the FRUIT and VEGETABLES food group).
Seven Farms Creamery Butter (Too high fat content to fit into the MILK and MILK PRODUCTS food group).

Penny Pincher Ideas

THE FOLLOWING PAGES PROVIDE THE CONSUMER WITH A SERIES OF PENNY PINCHING IDEAS FOR SAVING MONEY IN EACH OF THE FOUR FOOD GROUPS AND IN THE AREA OF CONVENIENCE FOODS

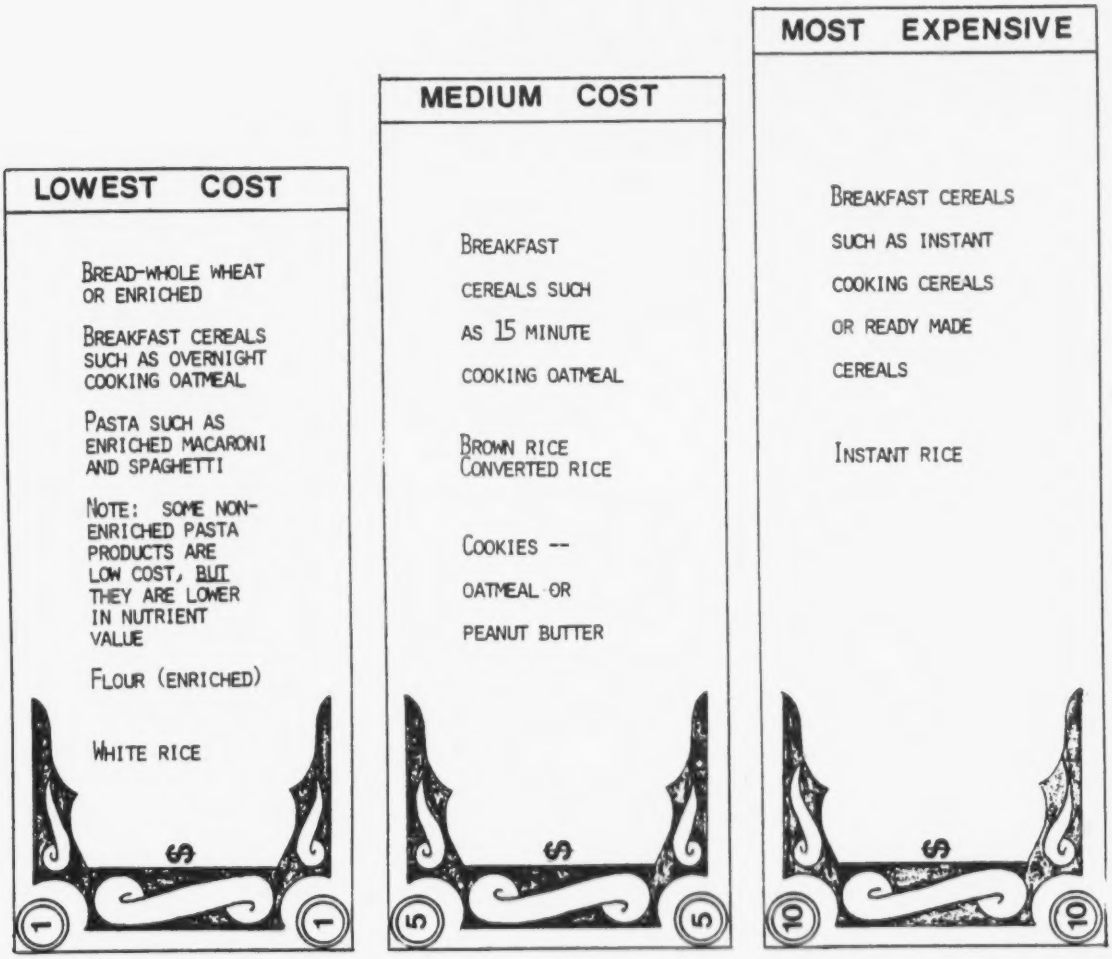
The information for the Penny Pincher Ideas was gathered from the following sources:

Food Basics, Consumer and Corporate Affairs CANADA

Food Wise, Good Buys, Saskatchewan Health

Saskatoon Star Phoenix, January 6, 1982.

SWITCH AND **SAVE** ON **BREAD** AND **CEREAL PRODUCTS**



Substitute one food for another in these serving amounts as recommended by CANADA'S FOOD GUIDE.

EXAMPLE OF ONE SERVING:

1 slice bread OR
125 to 250 ml. (½-1 cup) cooked or ready-to-eat cereal OR
1 roll or muffin OR
125 to 200 ml. (½-3/4 cup) cooked rice, macaroni, spaghetti

Penny Pincher Ideas - Bread and Cereal Products

·Refining and processing affects the price. Ready-to-eat cereals are more expensive than the ones you cook yourself. Select ready-to-eat cereals that have had the least amount of processing or whole grain cereals for the greatest food value.

·Compare different sizes of the same product by unit pricing. Some grain products have a very long shelf life (e.g. spaghetti) and may be more economical to buy in larger sizes.

·Form of the product affects the price. Rolls and buns are more expensive than a loaf of bread because of the time required to make them. (Check price of refrigerator buns or frozen dough).

·Pre-sweetening increases the cost. Sugar added to cereals by the manufacturer can cost you 2¢ - 10¢ more per serving than if you add the sugar yourself.

·Special additions (raisins, cinnamon, flavouring) or added seasoning (herbs) can increase the cost.

·Compare both weight and number of slices in the loaf when buying bread. Sandwich bread often costs less per serving as slices are usually thinner.

·Brand name of the product may affect the price. Store brands and "no name" brands, if available, cost less. Store brand cake mixes and ready-made cookies could save you time and money.

·If you have the space, stock up on day old bread and freeze or use for toast. Buy frozen bread when on "special" and store up to one month.

.Plain shaped pasta is usually less expensive than a fancy shape.

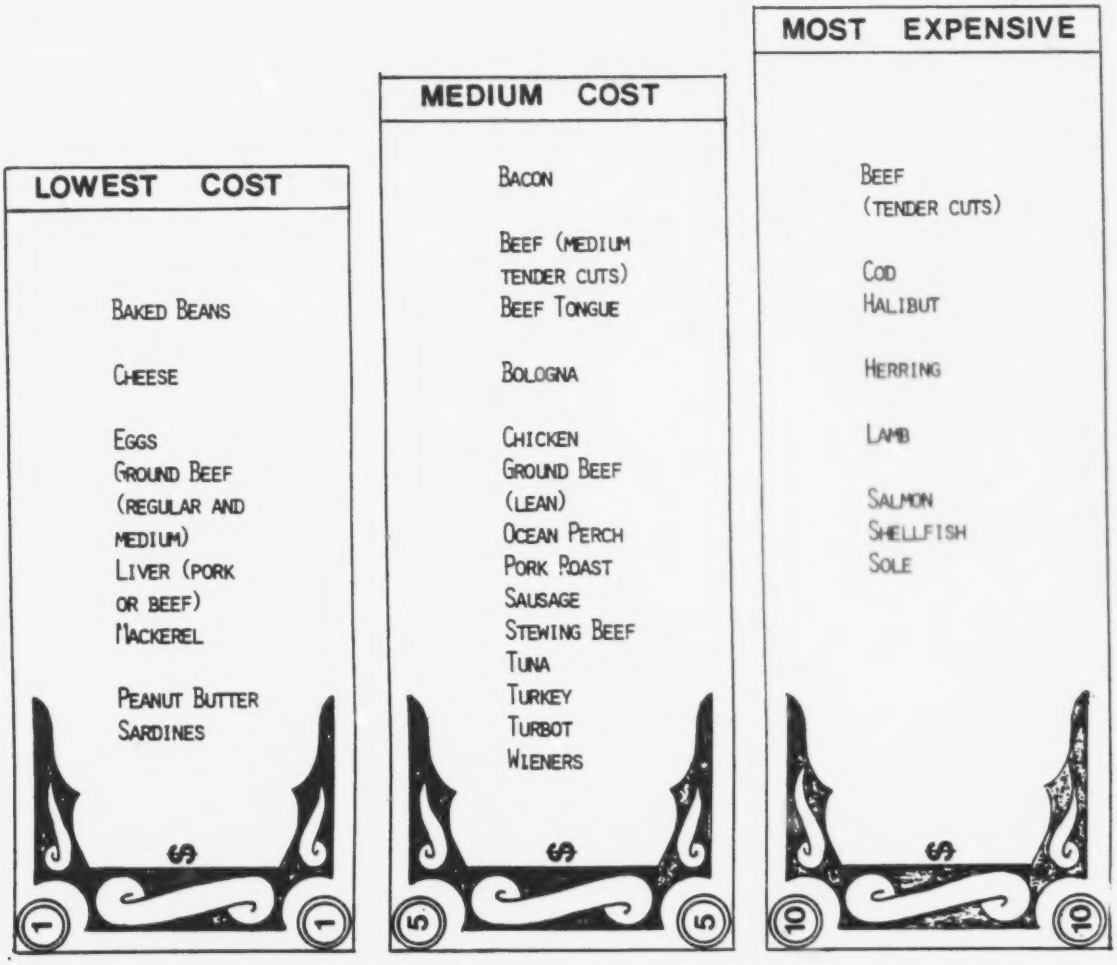
·Toys, gifts, contests, coupons may add to the cost.

·For the calorie conscious, buy unsliced bread products and slice it thinly. This will cost less than diet breads.

·Breads and flour that have "enriched", "whole grain" or "restored" on the label have more B vitamins and minerals and are a better buy. Bread made with milk can give you additional food value.

·Weigh cost against convenience and cooking time, when deciding which kind of rice to buy. Select brown rice over regular white rice as the brown rice contains more thiamin, niacin and iron.

SWITCH AND **SAVE** ON **Meat, Fish, Poultry and Alternates**



Substitute one food for another in these serving amounts as recommended by CANADA'S FOOD GUIDE.

EXAMPLE OF ONE SERVING:

60-90g (2-3 oz.) after cooking ... meat, poultry, liver or fish not including skin, bone, fat OR
60 ml. (4 tablespoons) peanut butter OR
250 ml (1 cup) baked beans or cooked dried peas or lentils OR
2 eggs OR
80 ml (1/3 cup) canned tuna or salmon OR
60 g (2 oz.) cheese

Penny Pincher Ideas –

Meat, Fish, Poultry and Alternates

- Meats and alternates of animal origin (liver, eggs) cost more than meat alternates of vegetable origin (beans, peas and lentils).

- Consider actual price per serving rather than price per pound when using meat that contains fat, bone or gristle. Boneless meat will usually serve 4 people per pound while meat with a bone will usually serve 2. A boneless roast may cost more per pound but cost less per serving.

- Form of the product will affect cost. Whole chicken is cheaper per pound than pieces. Solid tuna costs less than flaked. Cold cuts or processed meats purchased in bulk and sliced at home are cheaper than pre-packaged meats.

- Large chickens and turkeys are a good buy as they usually have more meat in proportion to bone. Leftover turkey and chicken can be frozen and used in casseroles and with stir-fried vegetables.

- Consider reducing serving size. Two ounces of meat instead of 4 ounces can be easier on the budget as well as the waistline. Canada's Food Guide recommends 2-3 ounces (60-90g) of protein for one serving. Use meat alternates of vegetable origin (beans, peas or lentils) to take up the slack. Stretch dollars by using smaller amounts of meat in casseroles, vegetables, stew, and stir-fried vegetables.

- Freeze leftover egg whites and yolks; they'll keep for up to 4 months. To freeze yolks for later use, add 5 ml (1 tsp.) of sugar or 2 ml (½ tsp.) salt to 50 ml (¼ cup) egg yolks (to reduce gumminess when thawed). Freeze egg whites as they are.

- Fish fillets are economical as there is no waste. One pound of fish fillets will usually feed 3 - 5 people. Not only is fish usually cheaper in price but it is lower in calories as well.

- Grade of the product affects the price but not the nutritional value. The highest grade will usually be the most tender and flavourful but also the more expensive.

- Stretch dollars by making meat go further. Use variety and less expensive meats such as liver, kidney and tongue with other meats. Use a cream sauce to extend a can of tuna or salmon. A half pound of hamburger and 4 one ounce slices of cheese will make 4 cheeseburgers which are less expensive (but equally nutritious) than 4 hamburgers using one pound of meat.

- Processed meats are usually high in fats, salt, and calories. As well, they are usually high in price but not protein.

Penny Pincher Ideas -

Meat, Fish, Poultry and Alternates

·Canned mackerel is inexpensive. It can replace tuna in recipes and can be added to a can of salmon to make it go further.

·Use ground meat in a variety of ways- Regular ground beef (up to 30% fat) can be used for recipes where meat is browned first and fat can be drained off. Lean ground beef (up to 15% fat) is preferable for patties and meat loafs.

·If the cost of large-sized eggs is 8¢ or more above the cost of medium-sized eggs, then the medium-sized eggs are a better buy. Smaller-sized eggs can be used for baking or meals where another protein food is also being eaten.

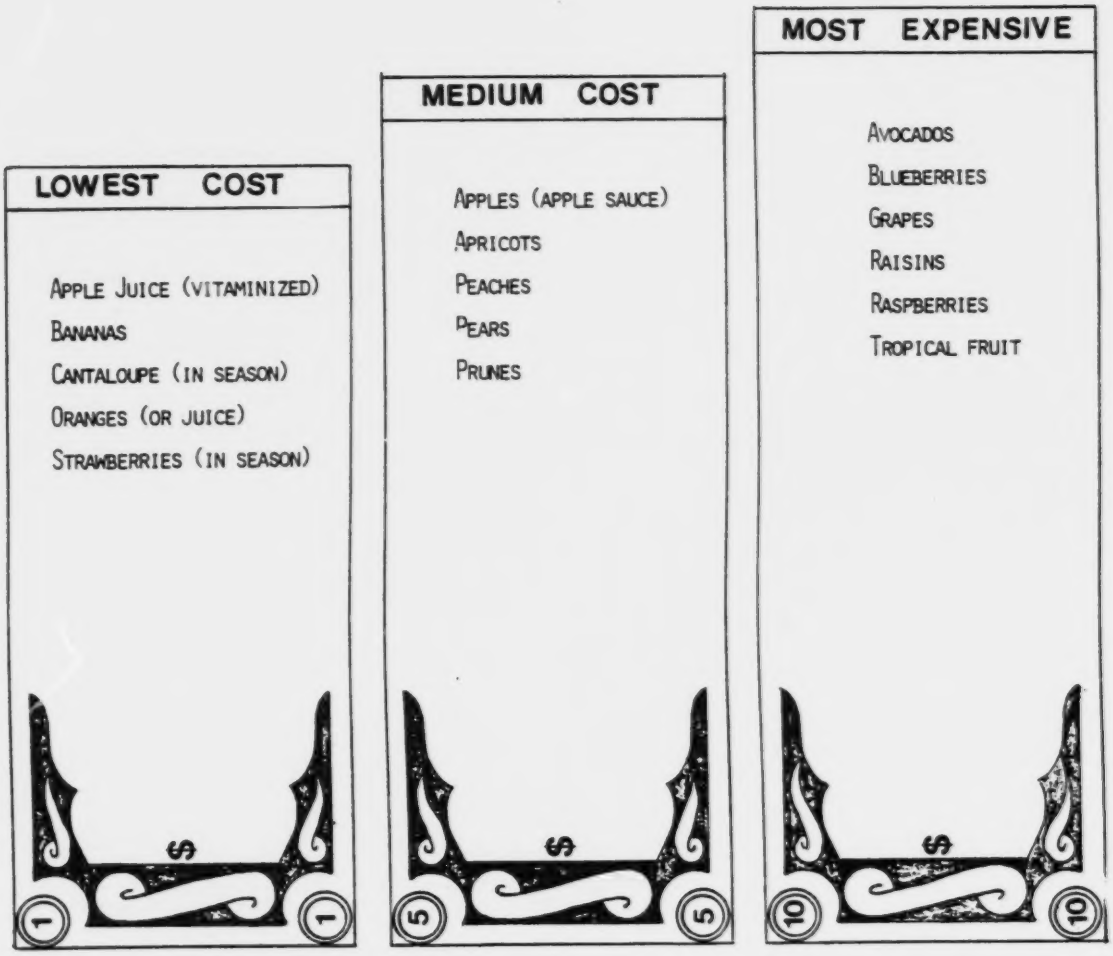
·Additions to a food product will cost you more as part of the preparation has already been done. e.g. self basting turkey, fish in batter.

·Tenderness of the cut of meat will affect the price. The most tender cuts of meat are usually the most expensive but nutritional value remains about the same with all cuts.

·One of the highest priced items on our food bill is meat. Plan one meatless meal or day each week. When selecting alternatives to meat, it is important to choose the correct combination of foods in order to make a complementary protein. Below is a loose guide for providing a complementary protein for a meatless meal or day.

BREADS and CEREALS (macaroni) (bran flakes)	+	MILK and MILK PRODUCTS (milk and cheese) (milk)
MEAT, FISH, POULTRY and ALTERNATES (legumes-peas, beans, lentils)	+	MILK and MILK PRODUCTS (milk)
MEAT, FISH, POULTRY and ALTERNATES (peanut butter) (legumes-peas, beans, lentils) (legumes-peas, beans, lentils)	+	BREAD and CEREALS (bread) (bread) (rice)

SWITCH AND **SAVE** ON **FRUITS**



Substitute one food for another in these serving amounts as recommended by CANADA'S FOOD GUIDE.

EXAMPLES OF ONE SERVING:

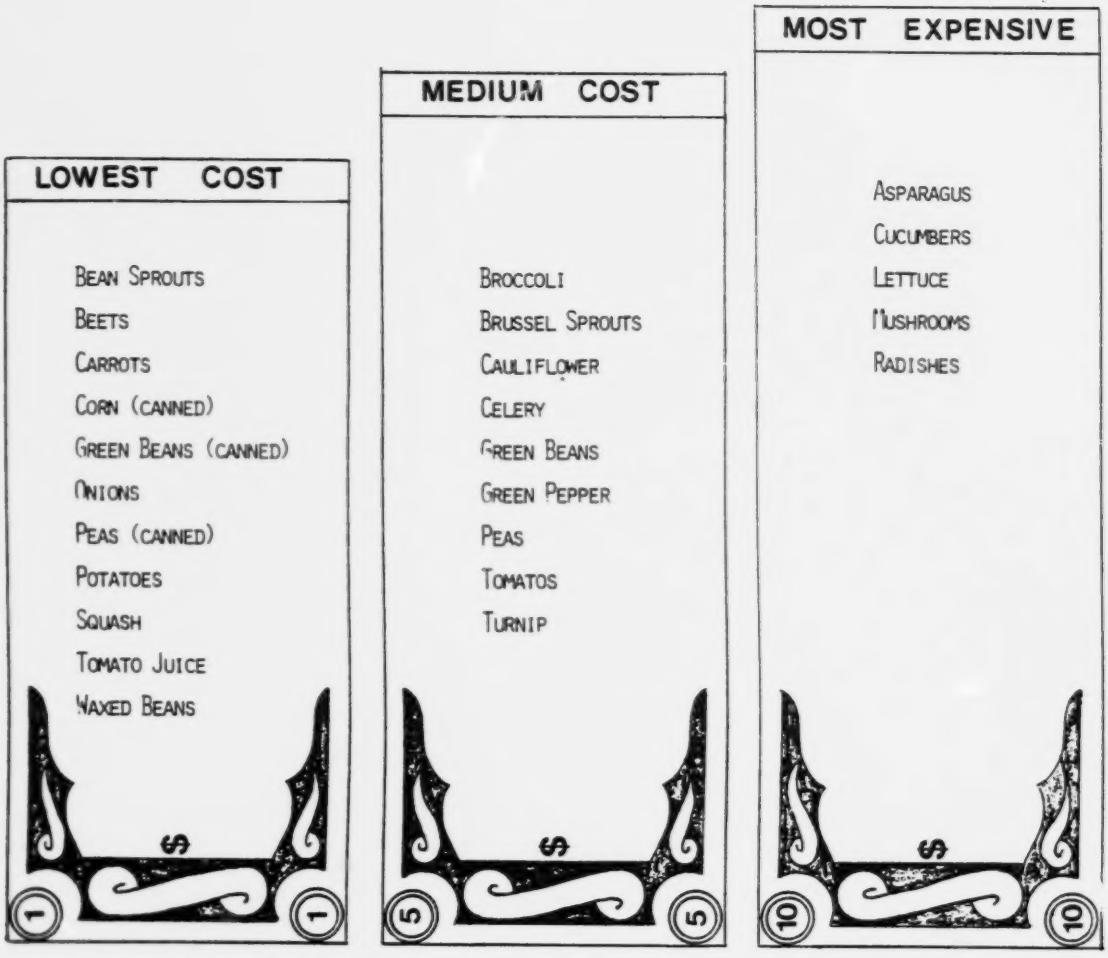
125 ml. (½ cup) cooked vegetables or its juice OR

One medium sized potato, carrot, green pepper, tomato OR

125 ml. (½ cup) cooked fruit or its juice OR

One medium sized peach, apple, orange, banana

SWITCH AND **SAVE** ON **VEGETABLES**



Substitute one food for another in these serving amounts as recommended by CANADA'S FOOD GUIDE.

EXAMPLES OF ONE SERVING:

125 ml. (½ cup) cooked vegetables or its juice OR

One medium sized potato, carrot, green pepper, tomato OR

125 ml. (½ cup) cooked fruit or its juice OR

One medium sized peach, apple, orange, banana

Penny Pincher Ideas - Fruits and Vegetables

- Fresh produce in season is usually the best buy. If you have the time, skills and storage space, preserving fresh produce in season can cut costs.

- Frozen vegetables can cut waste and costs for people living alone and for small families as small amounts can be used and the rest returned to the freezer.

- Form of the product affects the price. Whole canned or frozen fruits and vegetables usually cost more than cut-up or sliced fruits and vegetables as it is more difficult to keep them whole during processing. As well, fruits or vegetables that require a "special" technique such as French-style green beans or julienne carrots will be more costly.

- Grade of the product will affect the price but not the nutritional value.

- Substitute imported lettuce (made of water and a bit of magnesium) with nutritious cabbage for salads and coleslaw .

- A particular variety of fruits or vegetables within one type of produce will affect the price (bib, romaine, iceberg lettuce). How you plan to use the produce will affect which you choose and thus which will be the most economical buy.

- Small apples, oranges and bananas may be economical for children as larger ones may not be completely eaten.

- Canned vegetables cost less than frozen but are not as nutritious because the canning process harms vitamins.

- Quantity affects the cost. Check cost per unit when comparing two sizes of the same product. Large bags of frozen vegetables are economical only if you have the space in which to store them.

- Bulk packages of fresh fruit or vegetables cost less than if bought by the pound only if you use them before they spoil.

- "Additions" or "extras" added to the product increase the price. (e.g. beans in butter sauce, canned tomato sauce - Spanish style). Fruits or vegetables prepared for the consumer's convenience cost more.

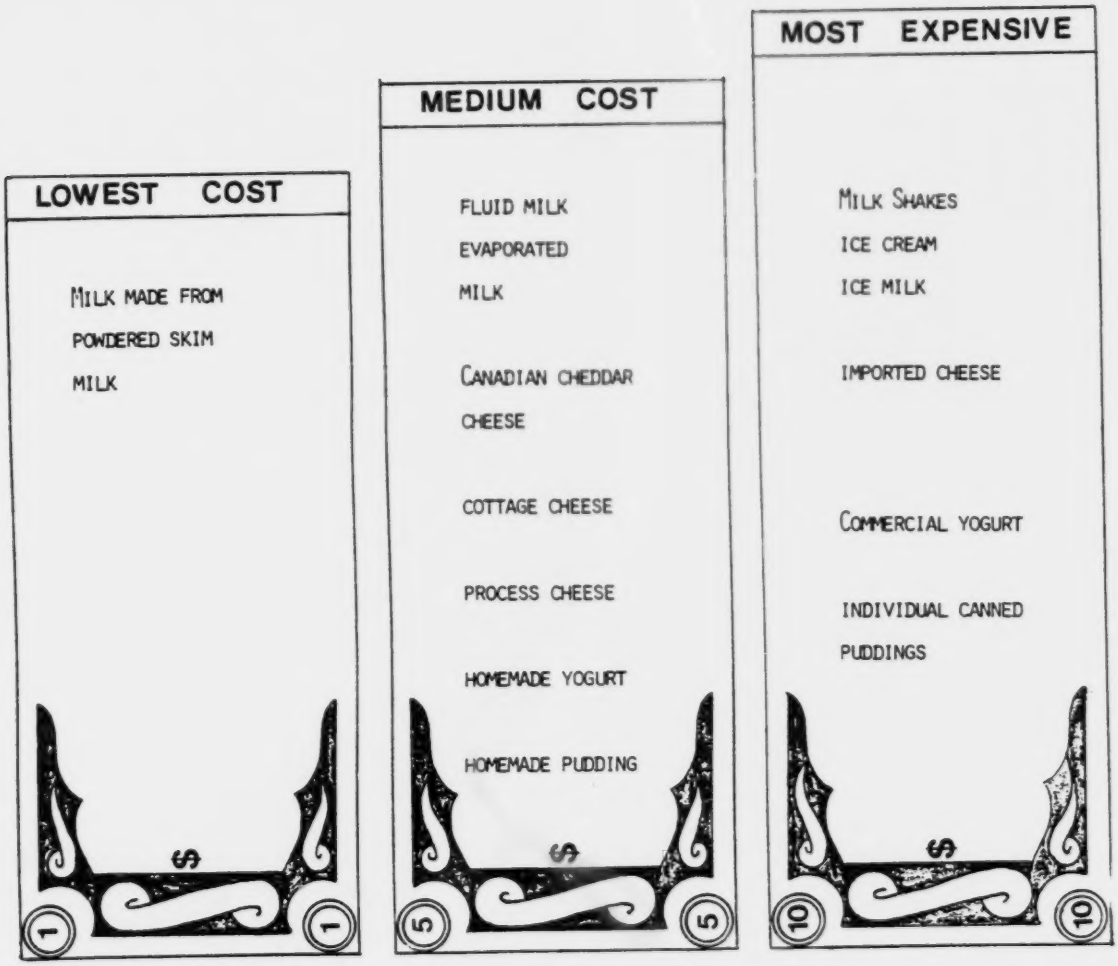
- The brand of the product will affect the price. More highly advertised national brands usually cost more than store or no-name brands.

- Fresh vegetables and fruit on special are a good buy only if you intend to use them quickly. Ripe bananas, when on "special" can be mashed and frozen for future baking needs.

- Freeze left-over juice from canned fruits and vegetables to use in stew, soups, gravies, desserts, jellies or fruit drinks.

- Dried lentils, peas, beans are cheap and nutritious. When combined with some ground meat or in a soup or with a cereal food (tortilla) they form a complete protein.

SWITCH AND **SAVE** ON **MILK** AND **MILK PRODUCTS**



Substitute one food for another in these serving amounts as recommended by CANADA'S FOOD GUIDE.

EXAMPLE OF ONE SERVING:

250 ml (1 cup) of milk OR

175 ml (3/4 cup) of yogurt OR

45 g (1½ oz.) cheddar or processed cheese

Penny Pincher Ideas - Milk and Milk Products

- The amount of fat in milk products affects the price. Generally, the higher the fat content, the higher the cost and the calorie level. Purchasing 2% or fluid skim milk lowers the cost (2¢-5¢ per quart), and you get fewer calories.

- The form of the product affects the price. For example, sliced or individually wrapped cheese can cost up to 2¢ more per slice.

- Evaporated and nonfat dry milk are lower in cost but similar in nutritional value to fresh milk. Try mixing skim milk powder half and half with whole milk to make 2% milk that is lower priced than what you can buy. Refrigerate overnight to improve the taste when using the milk for drinking. Use skim milk powder for puddings, casseroles and in baking.

- Quantity can affect price. A one litre carton of milk may cost more than multiple litre cartons.

- Sweetened, condensed milk should be used only in specific desserts and candy recipes. It is more expensive than evaporated milk and contains a larger portion of sugar.

- Additions to milk products (fruit to yogurt, hickory flavouring to cheese) can increase the cost.

- The stronger the natural flavour of cheese (old as compared to medium or mild) the most costly the cheese. Imported cheese also tends to be more expensive than Canadian. Use mild or medium cheese in most recipes. For a sharper flavour, add mustard or Worcestershire sauce.

- Make your own instant cocoa mix for cocoa and chocolate milk by combining instant skim milk powder (1ℓ), cocoa (175 ml) and sugar (250 ml). For hot cocoa, combine 100 ml cocoa mix with 200 ml boiling water. For chocolate milk, combine 75 ml mix with 200 ml cold water.

- Grate cheese that has hardened, refrigerate or freeze and use in baked goods, sauces and casseroles.

- Flavor plain cottage or cream cheese by adding spices, herbs, or chopped chives, bacon bits, or pineapple to plain cottage or cream cheese.

- The brand you buy may also affect the price. Store brands are usually less expensive than national brands.

- Serve ice milk and sherbet instead of ice cream. They're easier on the waistline and the pocketbook.

- Yogurt made from partly skimmed milk or skim milk can be low in calories and in price. Yogurt can be used in any of the following ways:
  - with fresh, canned or frozen fruit
  - with breakfast cereals
  - with onions and parsley on baked potatoes
  - as a substitute for sour cream in dips, salads, salad dressings, or casseroles.
  - with tuna or salmon in place of mayonnaise.

Penny Pincher Ideas - Convenience Foods

Pizzas in a box, T.V. dinners, canned stew, instant mashed potatoes, frozen orange juice, dehydrated onion flakes, packaged cake mixes . . . are all examples of convenience foods. These foods have been partially or completely prepared so you need to spend little time and energy in the kitchen.

But do you always save time when using convenience foods? Do you save money? Does the time you save justify the higher price you might be paying? Only you can decide the value of convenience foods. Use the questions below and on the attached sheets to help you in your decision. Then read the right hand column for some additional information.

1) IS THIS CONVENIENCE FOOD MORE EXPENSIVE THAN THE SAME FOOD PREPARED IN MY OWN KITCHEN?

A convenience food is any food which has had much of the processing or preparation done for you and little, if any, home preparation is needed. You may save money with a convenience food or it may cost you more. It will depend upon the ingredients. A convenience food containing ingredients you usually have in your kitchen may not be a saving. On the other hand, buying large amounts of ingredients that you do not usually use will also add to your food bill. In most cases the convenience food will cost you more. However, with careful shopping you may find some that are less expensive, for example, frozen orange juice concentrate instead of fresh oranges which you squeeze. If the convenience food costs more than the home prepared product you must decide if the convenience is worth the added cost. Generally the greater the amount of preparation done for you the greater the cost in dollars and cents. Your time, however, may be more valuable to you.

Penny Pincher Ideas - Convenience Foods

2) HOW MUCH TIME WILL THIS CONVENIENCE FOOD SAVE ME?

If the time you have for preparation is limited you must decide if the cost is worth the time you will gain. Check the label. Some convenience foods may require you to do as much preparation as if you had prepared it from scratch yourself. Convenience foods which are combinations of food (e.g. pizza mix) will usually cost more than buying each of the foods separately and making the food yourself. The manufacturer has simply collected the ingredients for you and put them together in one package.

3) WILL THIS CONVENIENCE FOOD LOOK AND TASTE AS GOOD AS IF I HAD PREPARED IT MYSELF?

Some convenience foods will have sugar, colors, stabilizers, flavors and other additives added so as to improve the appearance and taste but not necessarily the nutritional value. Could you make the same food at home without a lot of unnecessary chemical additions?

4) WILL THIS CONVENIENCE FOOD BE AS GOOD FOR ME AND MY FAMILY AS FOOD I HAD PREPARED MYSELF?

The nutritive value of some convenience foods may not be as high as food you prepare yourself. Some convenience foods have a great many additives in the form of colors, flavors and stabilizers which provide no food value. There are, however, many convenience foods which are nutritious. For example a frozen T.V. dinner which had food from the four food groups may be a very nutritious choice. The consumer may not have the skills or equipment with which to prepare this T.V. dinner and thus it is more convenient to buy it. However, if the skills, equipment and ingredients are present to prepare home-made T.V. dinners, they may be made more nutritious by the addition of more vegetables and less fat or starch.

Penny Pincher Ideas - Convenience Foods

5) WHAT ADDITIONAL INGREDIENTS MIGHT I HAVE TO ADD TO THIS FOOD DURING PREPARATION?	Some convenience foods may need the addition of some ingredients such as ground beef. If the package calls for the addition of certain ingredients, you must add this to the cost of the convenience.
6) IS MIXING, BAKING, COOKING EQUIPMENT INCLUDED OR DO I HAVE TO SUPPLY MY OWN?	The addition of some mixing, baking and cooking equipment may increase the cost but shorten preparation and clean up time. When time is short, this is a very important factor.
7) HOW MUCH OF THIS CONVENIENCE FOOD WILL I HAVE TO BUY TO FEED MYSELF AND/OR MY FAMILY OR FRIENDS?	Form of the product will affect the cost. Some convenience foods are inexpensive when purchased for one or two persons but are quite expensive to feed large families.
8) DOES THIS CONVENIENCE FOOD HAVE SOME SPECIALIZED FOOD WHICH REQUIRES SPECIAL EQUIPMENT OR SKILLS I CANNOT DUPLICATE IN MY OWN KITCHEN?	Some convenience foods may require special food preparation skills and equipment which may not be available to you of if available, only at a great cost.

The total cost of any food includes the cost of ingredients, preparation and storage, electricity and gas, and the consumer's time and energy. The decision is yours. Which is more important to you . . . your time, your money, and/or, in some cases, nutritional value.

BEFORE YOU GO TO THE STORE

CONTENTS OF SECTION II

1. Guide
2. Before You Go to the Store
3. Making a List
4. Some Food for Thought
5. How to Stretch Your Meat Dollar
6. Alternatives to Meat

SECTION II
BEFORE YOU GO TO THE STORE

Guide

Careful planning is the key to getting value for your food dollar. By taking the time to plan, consumers have less chance of overspending and a better chance of providing themselves and/or their families with nutritionally balanced meals. Planning has other advantages as well:

1) Consumers will be able to save time while preparing and shopping for food.

2) Waste is kept to a minimum because food is used within its storage time and leftovers are used up.

3) Interesting, attractive and nutritionally sound meals will be served.

4) Canada"s Food Guide, if followed, allows an individual 1000 -1400 calories per day. This calorie amount will allow most people to lose weight. (The recommended daily intake for a 19-35 year old female is 2100 calories).

5) Consumers will be able to avoid "impulse buying" because they go to the store with a carefully prepared shopping list in hand.

6) By carefully planning in advance, consumers will be able to choose food alternatives that fit into their food budget but are still nutritious.

This section stresses the importance of planning before you go to the store. It starts by providing an activity "Before You Go to the Store" which

assists you to evaluate your present shopping habits. The activity also provides a set of guidelines for improving these shopping habits.

"When you buy food you should be buying nutrition."[1] Planning meals on paper is one way to do this. Menu planning can help you save money because you plan in advance what you will eat for the coming week. In this way, you can avoid costly "impulse buying" and stay within your budget but still serve nutritious and interesting food. The activity "Making a List" outlines a suggestion for planning meals around Canada's Food Guide using the local weekly advertised food specials. By using this method, you will be buying nutritious food at a reduced price.

The sheet "Some Food for Thought" compares the cost of two grocery lists containing food which essentially have the same nutritional value but different price tages. Using less expensive brands and grades of food, and foods with a lower fat or sugar content can save on the grocery bill. One of the highest priced items on your food bill is usually meat. If you are interested in some ways to help cut your meat costs, the article, "How to Stretch Your Meat Dollar", may offer some help.

One method of cutting your meat bill may be to serve an alternative to meat. The fact sheet "Alternatives to Meat" offers some economical and tasty meat alternative suggestions that may quickly find favor with your family and your pocketbook.

Consumer and Corporate Affairs Canada, "Leader's Guide to Planning Your Food Dollar," Food Basics, 1979, p. 5.

Before You Go to the Store

Careful planning before you to go to the store is the key to getting value for your food dollar. To find out how careful a planner you are, answer "Yes" or "No" to the following questions.

____ 1. Do you know how much money (within $2.00 or $3.00) your family spends on food per week?

____ 2. Do you know what portion of your income is spent on food eaten away from home (restaurant meals)?

____ 3. Do you set a limit on the amount of money you will spend on groceries?

____ 4. Do you know how much of your grocery bill is spent on "non-food" items such as toilet tissue and cleaning products?

____ 5. Do you know what foods are needed to maintain your health according to Canada's Food Guide?

____ 6. Do you know who the hungriest member(s) of your family is/are according to age and sex?

____ 7. Do you plan meals on paper before shopping?

____ 8. Do you write up a shopping list before going to the store?

____ 9. Do you follow your shopping list in the store (no impulse buying)?

____10. Do you compare the cost, flavour and appearance of similar foods in different forms - fresh, frozen, canned or dried - and buy the form that is most economical for you to use?

____11. Do you follow newspaper advertisements and reports to help you get the best buy on certain foods (super special sale price)?

____12. Do you always check advertised specials in newspapers before planning your menus and making your shopping list?

____13. Do you buy foods, in particular, meat, on the basis of cost per serving rather than cost per pound?

_____ 14. Do you buy processed meats (bologna) and cheese by the piece and slice them at home instead of buying them pre-sliced and pre-packaged?

_____ 15. Do you buy large or economy sizes when they are on sale, providing you can use them up before they spoil?

_____ 16. Do you usually compare the cost of a "convenience food" with a similar homemade food before buying the convenience food?

_____ 17. Do you use bread, rice, macaroni and skim milk in hamburger and other meat dishes to make the meat go further?

_____ 18. Does your meal plan and budget include snacks, bagged lunches and meals eaten away from home?

_____ 19. Do you buy nutritious snacks (nuts, yogurt, fruit, raw vegetables) instead of "junk food"?

_____ 20. Do you use all leftover food to advantage (never have to throw any away)?

_____ 21. Do you clip coupons from newspaper advertisements and magazines for items included on your shopping list?

_____ 22. Do you usually use cheaper no-name or store brands when available?

_____ 23. Do you keep a list of staple supplies as they run out and add them to your shopping list?

_____ 24. Do you keep track of the regular prices of items you usually buy so you know when they come on sale unexpectedly?

_____ 25. Do you usually keep up-to-date with new foods and compare them with those you usually use before purchasing them?

SCORING

Give yourself 4 points for each "Yes" answer.
If your total score is:

80 - 100	You are a superwise and careful planner.
60 - 80	You are a good planner but could use some improvement.
BELOW 60	You need to spend some time developing some planning skills.

Making a List

The following activity suggests one method of planning nutritious meals while taking advantage of the weekly advertised food specials.

INSTRUCTIONS

1) Using the attached sheet called "General Meal Plan Guide", plan a week's menu for your and/or your family. Gather copies of the weekly newspaper food advertisements from the various stores in your area. Use as many of these advertised specials as possible to help you plan your menu. If you are new to menu planning you may find it easier to plan only the main meals for one week. By planning your meals in this manner you should have substantial savings on your food bill. (Note: You may wish to plan your menu by using all the advertised specials that you have gathered from a number of the stores or you may wish to use the advertised specials from only one store).

2) You may wish to check your menu plan with the copy of Canada's Food Guide provided in Section I to ensure that your menu plan is nutritionally sound.

3) Using the food advertisements and your menu plan, you should now be able to prepare a partial shopping list.

GENERAL MEAL PLAN GUIDE

The chart below has been designed to assist you to plan weekly and/or daily menus.

The chart illustrates how the recommended daily servings from each food group could fit into a daily and/or weekly eating plan. The foods marked with asterisks show daily servings that are recommended for adults in Canada's Food Guide. If you are planning for adolescents, children or pregnant women, you may need to serve larger amounts of these particular foods. Check the copy of Canada's Food Guide to be sure. To use the chart to plan meals, fill in the spaces opposite each food group with the food you plan to eat for that meal. An example is given to assist you.

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Breakfast							
Fruit*	grapefruit						
Cereal	granola						
Bread*	whole wheat toast						
Milk/Milk Product	milk						
Lunch							
Meat or alternate*							
Vegetable*							
Vegetable							
Bread or cereal product							
Fruit*							
Milk or Milk Product*							
Dinner							
Meat or alternate*							
Vegetable*							
Vegetable							
Fruit							
Bread or cereal Product*							
Milk or Milk Product*							

II-8

SOU. . - Food Basics, Consumer and Corporate Affairs Ca. .da.

Follow-Up Ideas

1) Before sitting down to plan your menu, you may first want to make a quick check of your cupboard shelves and refrigerator/freezer to see what's on hand and what foods need to be used before they spoil or go stale.

2) The weekly food advertisements will likely not give you a complete menu plan but will provide you with some of the main dishes for your daily meals.

3) The use of advertised specials to plan weekly menus will work in smaller communities with only one or two stores as well as larger communities with two or more stores. If you live in a community that has a large number of stores you may wish to consider the value of shopping for advertised specials at a number of various stores against the cost of gasoline, your time and the cost of other foods you can buy at the same store.

4) Keep a list of the staple supplies that run out and add them to your major shopping list.

5) Once you have a shopping list, be sure to take it to the store with you. Buy only what is on the list unless there is an unadvertised special that you are positive is a special.

6) It is important to consider that some of the food being advertised is listed at the regular price and is not "on sale" at all. A method of keeping track of prices will help consumers decide which items are good buys.

7) This method of planning meals is a suggestion that can, if used correctly and over a period of time, help you to realize substantial savings on your food bill.

Some Food for Thought

Two families of the same size, eating according to Canada's Food Guide, might have entirely different food bills. The following lists of food have essentially the same nutritional value, but not the same dollar value. The total cost of each list can give us some food for thought.

LIST #1

Orange juice, unsweetened (Sun-Rype)	1 litre	$ 1.06
Margarine (Better Buy)	454 g.	$ .67
Fluid skim milk (Co-op)	2 litres	$ 1.39
Cheddar cheese, mild (Sunspun)	340 g.	$ 2.63
Corn, cream style, Canada Choice (Sunspun)	398 ml.	$ .68
Shortening (Crisco)	454 g.	$ .99
Bread, enriched (Ovenfresh)	567 g.	$ .67
Hamburger, regular ground	1 lb.	$ 1.49
Pork butt steak (shoulder)	1 lb.	$ 2.39
Pork liver	1 lb.	$ .75
Salmon, canned, pink (Gold Seal)	220 g.	$ 1.79
	TOTAL COST	$14.51

LIST #2

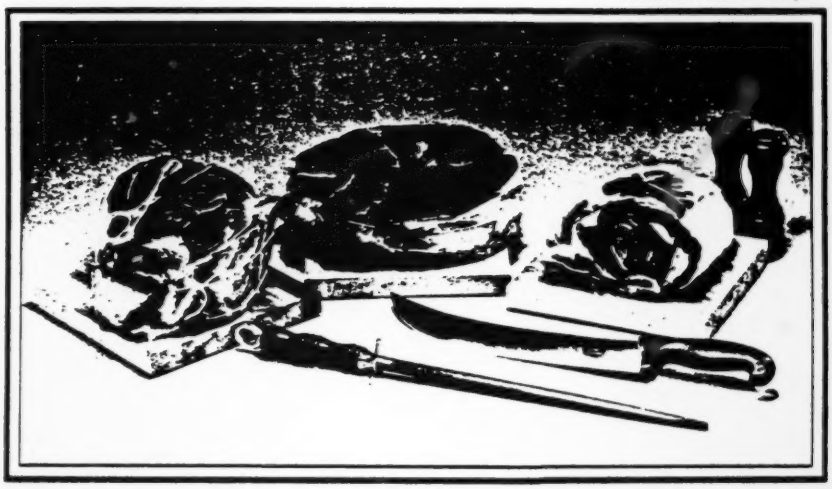
Vitaminized unsweetened apple juice (Sun-Rype)	1 litre	$ 1.18
Butter (Palm)	454 g.	$ 2.15
Fluid whole milk (Co-op)	2 litres	$ 1.51
Cheddar cheese, old (Sunspun)	340 g.	$ 2.77
Corn, whole kernel, Canada Fancy (Sunspun)	341 ml.	$ .79
Shortening, (Fluffo)	454 g.	$ 1.05
Crusty Rolls (Ovenfresh)	1 doz.	$ 1.19
Hamburger, lean ground beef	1 lb.	$ 1.98
Pork loin chops, Rib and Tenderloin	1 lb.	$ 2.69
Beef liver slices	1 lb.	$ .89
Salmon, canned, Sockeye (Gold Seal)	220 g.	$ 2.59
	TOTAL COST	$18.79

How to Stretch Your Meat Dollar

By choosing meat wisely and reducing portions, your diet will be healthier and more economical.

by Dorothy Chenier

Photos: André Amyot



Only in the past 100 years have most people in the United States and Canada been able to afford our meat-rich diet. Developments in transportation and preservation combined with the rise of the middle class have made it possible.

In the last half of the 19th century, trains and steamships were able to speed meat to the big cities. Advances in refrigeration helped get it there in good condition. At the same time, settlers were opening up the vast rangelands of the Americas and Australia to raise that meat.

In 1980, Canadians consumed, per capita, 74.23 kg (163.65 lbs.) of beef, pork, veal and lamb, and 22.86 kg (50.4 lbs.) of chicken, fowl and turkey. Beef and pork are the most popular by far.

Meat, to the average North American, brings beef to mind. It hasn't always been that way. In the United States, beef didn't win out over pork until after 1950. Recent U.S. figures show an increase in chicken consumption and a decline in beef consumption, perhaps due to fears about the amount of saturated fat and cholesterol in beef.

How Much Meat is Enough?

Meat is a major source of protein and an important source of some B vitamins, iron and other minerals. It also provides you with a sizable portion of your daily energy requirements. But if you eat more than 180 grams (six ounces) per day, you're likely consuming more protein — and calories — than you need.

Canada's Food Guide recommends two servings per day of meat, fish or meat alternates such as peanut butter, cheese, eggs, nuts, seeds and dried cooked peas, lentils or beans.

Protect Yourself dietary consultant Danielle Medina breaks this down further and suggests that no more than one portion of meat, fish or poultry be served a day. A meat alternate could be served at another meal that day.

She says that two or three servings a week of red meat, including liver, are ample.

A serving is 60 to 140 grams (two to five ounces) of lean, boneless cooked meat containing an average of 20 grams of protein.

To help visualize an average serving of 90 grams (3.5 ounces), imagine a hamburger patty measuring eight cm (three in.) across and one cm (2/3 in.) thick.

Fish, says Medina, could be served on two of the other days of the week and poultry on the remaining two days.

Protein

How much protein you should eat depends on the number of kilojoules (calories) you need. For example, a sedentary young woman weighing 56 kg (123 lbs.) and measuring 161 cm (5'4") may need 8,800 kJ (2,100 calories) daily. Proteins should account for about 17 per cent of the kilojoules, or 41 grams. The proteins can come from animal and vegetable sources. Most Canadians eat twice as much protein as they need.

The protein in the three main plant categories of meat and alternates — nuts, legumes and cereals — are not complete. Individually they don't contain, as do meat and fish, all eight essential amino acids needed by the body. To get all eight, you have to combine two different types of plant food such as a legume (peanut butter) and a cereal (bread). The protein in the three plant categories can also be completed by combining them with the amino acids found in milk, eggs or meat.

We often combine protein sources without being aware of it. The morning milk helps use more of the protein in cereals. Baked beans or pea soup with bread are other traditional examples. (For more detailed instructions on balancing vegetable proteins, see *The Vegetarian Diet*, **Protect Yourself**, November 1981).

We also get proteins from two other food groups in Canada's Food Guide — milk or milk products and bread or cereals. The fourth group,

(continued on page 31)

II-11 47

Lower Your Beef Costs

By learning how to identify and separate the muscles of varying tenderness in a cut, you can use cheaper cuts in place of more expensive ones. Photos ① to ⑰ on the following pages will show you how.

Blade Chuck Roast

(Photos 1 to 5 on this page.)

The tenderest chuck roast is the one closest to the rib. The least tender is closest to the neck, and distinguished by a bump or ridge on the blade bone. This ridge gets smaller as you go back towards the ribs.

Whichever you get, a three-kilogram (six lb.) roast can be cut up to provide up to four meals for a family of four. A blade chuck roast can give you lots of variety: small steaks, a meaty pot roast and strips for stir frying. All you have to do is learn how to divide it into muscles of varying tenderness.

① To cut up a chuck roast, place the outside bone (the backbone) closest to you. The bone furthest away is the blade bone. ② Remove the muscles above the blade bone. They are medium tender and can be cut into small steaks, strips for Chinese stir-fry dishes, stroganoff or beef rolls. ③

④ The centre muscle of the chuck, just below the blade, is tough. Generally braised or simmered, it can be tied up for a pot roast or cut into stewing beef.

The remaining muscle just above the backbone ⑤ is the tenderest. In a first cut blade chuck, it can be sliced into steakettes. In other chuck roasts, it gets a bit small for steakettes and can be used for sauted or stir-fried dishes. Be sure to remove excess fat and gristle.

Round Roast

(Photos 6 to 12 on page 31.)

It is worth learning to identify the individual muscles ⑤ in the round roast. The three major sections can be pulled apart. You will see ⑦ one long and two shorter muscles. The long muscle is the most tender — the top round ⑧ . It can be sliced as shown ⑨ into steaks. The smaller of the two remaining muscles is the eye of the round ⑩ , not nearly as tender as the top. Sliced thinly, it can be fried as a sandwich steak, roasted in the oven or barbecued. Marinating it will make it tender.

The bottom ⑪ is as tender as the eye. It can be braised, made into Swiss steaks or used for beef rolls, paupiettes or roulades. ⑫ If the butcher will run the bottom or eye of the round through his tenderizer, you can have a cube steak for a lower price. If not, battering it with the edge of a plate, cutting board or meat mallet will break up the fibres.

Rib Roast

(Photos 13 to 17 on page 32.)

A rib roast is a big splurge cut, but you can get two or three meals for four out of a three kilogram (six lb.) rib roast containing three ribs.

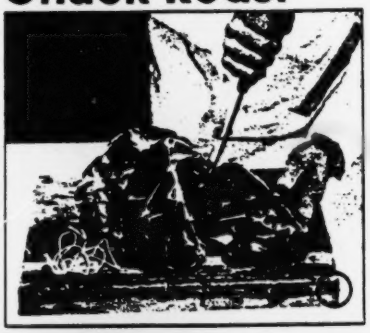
If the ribs are too long, ask the butcher to saw through them ⑬ . The ends which are cut off the roast are short ribs. Get them sawed in two if they are too long.

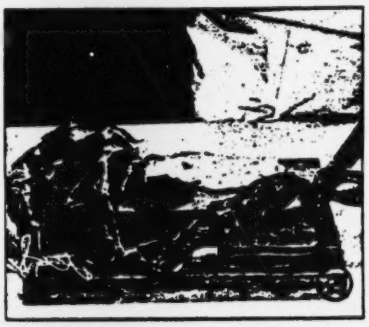
The remaining roast has three main muscles. The muscle around the outside of the roast ⑭ can be pulled away. Marinated, it will make a meal of shish-kebabs or a stew such as beef bourginion.

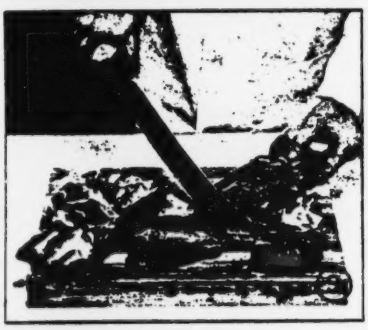
Next, separate the centre muscle (the eye) ⑮ from the muscle along the bone. Remove the small bone at the end of the ribs. The eye is the most tender part. It makes a good roast or can be sliced into tender steaks. It can also be spit-roasted.

The muscle still attached to the bones can be cut by slicing between the bones. The resulting riblets ⑯ can be cooked in the oven or with a barbecue sauce.

The Blade Chuck Roast







(continued from page 29)

fruits and vegetables, provides very little protein.

Vitamins and Minerals

Meat is a valuable source of iron and niacin. It provides from 27 to 43 per cent of the average Canadian adult's requirements (10 to 14 mg) of iron, which is needed to transport oxygen to the cells. Beef has the highest proportion of the best-absorbed form of iron. Pork is not far behind.

Meat alternates such as lentils are relatively good sources of iron. So are shellfish, egg yolks, dried fruits, nuts, green leafy vegetables and black-strap molasses. There's iron in whole-grain cereals, including brown and parboiled rice. White flour in Canada is enriched with iron.

There's only one catch about iron from plant sources — it is not as well absorbed by the body. Vitamin C helps absorb iron from plants. Your morning orange or apple juice will help you use the iron in your morning cereal or toast. At other meals, foods like tomatoes, green peppers, parsley, fresh or frozen strawberries, cantaloupe, broccoli or brussels sprouts will add the needed vitamin C.

Niacin is a B-vitamin needed to produce energy from carbohydrates. The more calories we need, the more niacin we need. Fortunately, niacin is in many foods, including red meat, fish, chicken, whole grain or enriched cereals and legumes such as peanuts, beans and peas. If you follow Canada's Food Guide for a balanced diet, you will get enough niacin.

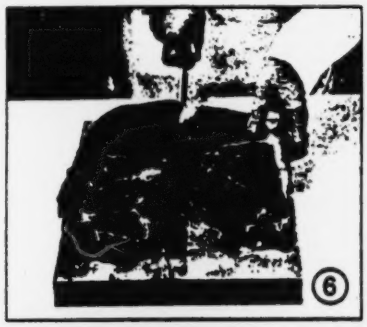
Saturated Fat and Cholesterol in Meat

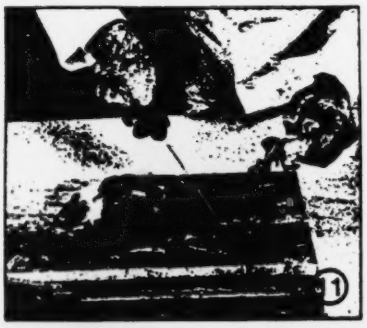
People are cutting back on meat for two reasons. One is price and the other is a fear of saturated fat and cholesterol.

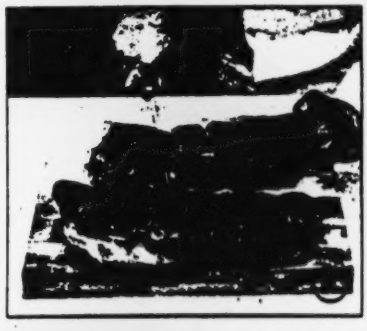
The American Heart Association says that "numerous studies have shown that many people who exhibit no evidence of heart disease increase their risk of heart attack by consuming a daily diet high in saturated fats and cholesterol.

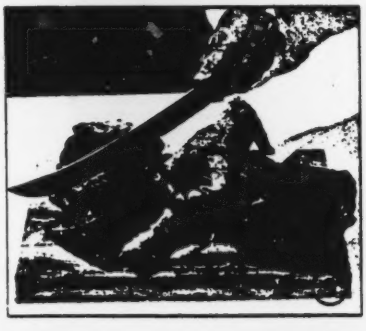
"The typical American diet is rich in egg yolks, meats, butter and cream, which are the main sources of cholesterol and animal (saturated) fats. These foods tend to raise the level of cholesterol in the blood, and a high blood cholesterol level contributes to the development of arteriosclerosis... the disease which underlies most heart attacks and strokes."

The Round Roast









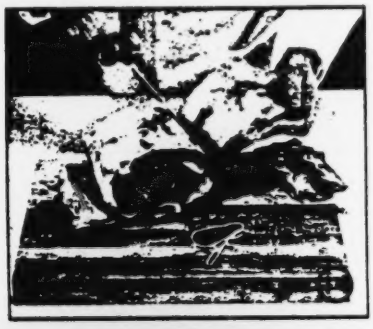
What is too much fat? Experts estimate that Americans and Canadians get 40 to 50 per cent of their calories from all forms of fat. Dietician Danielle Medina says that fats from all sources should provide a maximum of 30 per cent of the total kilojoules we need.

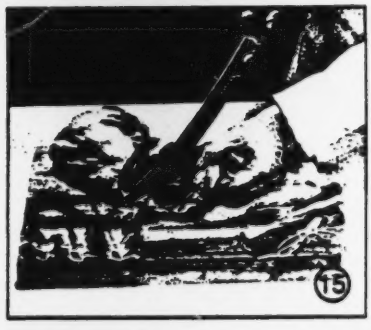
Our bodies do need fat — but too much is dangerous, especially saturated fats which come mostly from animal sources. Red meat and poultry, say the experts, are responsible for about 24 per cent of the total fat in American and Canadian diets.

Fats which are predominantly saturated are solid at room temperature. Lard, meat fat, butter and coconut oil are examples. Fats which are predominantly unsaturated are liquid at room temperatures — like cooking oils.

Nutritionists agree we should reduce our consumption of saturated fats. They cite Japanese statistics to support their views. The Japanese have low heart disease rates. They also consume up to five times less fat than we do. And most of what they eat is unsaturated fat from the

The Rib Roast





fish, vegetables and oils in their diets.

There is less agreement on the role dietary fat may play in certain cancers. Rates of cancer of the breast, colon and prostate gland show a strong positive correlation with fat in the diet, according to a report by the National Academy of Sciences in the U.S. The Japanese rate of those cancers is much lower than ours. The report recommends cutting fat consumption by at least a quarter.

Reducing the total quantity of meat in the diet reduces the amount of fat, especially saturated fat and cholesterol.

To further reduce fat, choose the leanest meat that will serve your purpose. A broiled steak needs some marbling of fat, but not all that fat around the outside. A well-seasoned iron frying pan only needs to be brushed with oil to fry a steak, and a teflon-coated pan needs none.

The leanest cuts of beef are the rump and the round, the flank and the sirloin. Organ meats are low in total fat, but high in cholesterol. The leg and loin are the leanest parts of lamb and pork.

Chicken and turkey have less saturated fat and more unsaturated fat than red meat. Removing the skin after broiling or roasting leaves a very lean meat.

Hamburger is high in fat, but both regular and lean ground beef have the same amount of fat once cooked as patties or in dishes where excess fat can be drained. You can reduce fat content by having the butcher grind lean round, but the flavour won't be as good without some extra fat.

Stews and soups should be carefully skimmed, or allowed to cool and the congealed fat scraped off.

From a nutritional point of view, chuck and other less tender cuts are as valuable as the best steak and contain less fat. Despite longer cooking times, tough cuts can save time in the kitchen. They require little attention, are best cooked in quantity, and improve on reheating.

Comparison of Some Nutrients

Food	Protein (g)	Fat (g)	Iron (mg)	Niacin (NE)
Beef, rib roast 90 g	19	14	2.4	6.8
Beef, liver 90 g*	24	10	8	20.6
Chicken, 90 g	21	3	1.5	11.6
Ham, 90 g	21	28	2.7	8.7
Lamb, 90 g	26	6	1.9	11.1
Pork, 90 g	20	28	2.6	9
Turkey, 90 g	28	5	1.6	12.6
Veal, 90 g	24	10	3	10.3
Eggs, two large	12	12	2.2	1.8
Milk, 250 mL of two per cent	9	5	0.1	2.3
Tuna, 90 g	26	7	1.7	14.9

** 60 g of beef liver is an adequate serving*

You can get two or three meals for four out of a three kg (six lb.) rib roast containing three ribs. (See page 30 for cutting instructions.) Photo 17 shows all the usable parts of the rib roast.

Beef Prices

Beef prices are cyclical. There is a long-term cycle in Canada and the United States, and more localized short-term cycles. Unforeseen international events can upset these price cycles.

The long-term cycle applies to the entire Canada-U.S. market. In this market, herds are built up when prices are high and feed is not too expensive. The effects are not felt on the market for two years and nine months — the time it takes from conception until the steer is ready to slaughter. Two years ago, says Jean-Pierre Potvin, beef was expensive because it was scarce. Now we are in the rebuilding stage and prices have gone down.

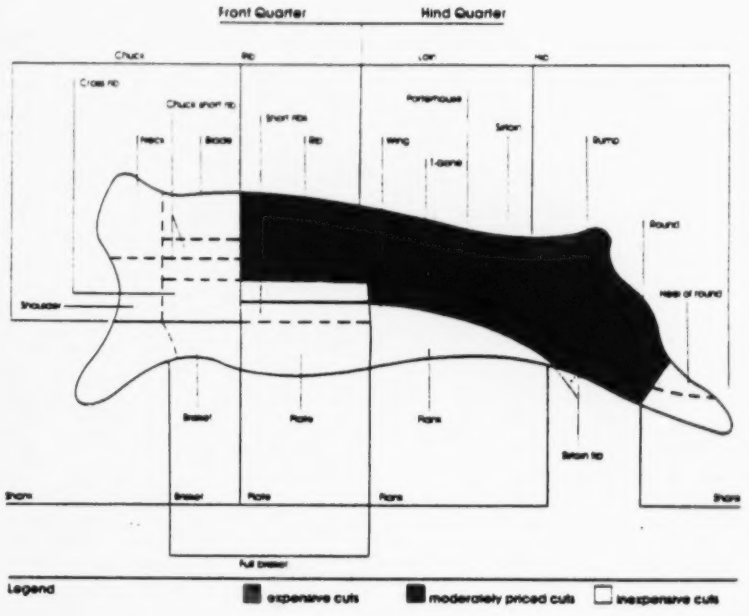
If beef is getting high prices in the U.S., Canadian producers will sell there and Canadian prices will rise to U.S. levels. Conversely, if beef is getting high prices here, U.S. beef will flow to Canada.

The short-term cycle is local. Canadian price levels are determined in the two major centres, Montreal for the east and Toronto for the west. Together they serve half the population.

Here, supply and demand set the prices paid by supermarkets. If one, two or three chains feature beef specials, a demand is created at the wholesale level. The following week, wholesale prices rise. If, on the other hand, chains do not sell all their stock, they want to buy less and can afford to be choosy about price and get what they want for less. Whatever they pay, chains can still set prices high or low. For example, beef is often used as a loss leader.

In addition to fluctuating markets, international events can upset our beef prices. For example, in the wake of the war in the Falklands early in 1982, England and other Common market countries substituted North American beef for Argentinian, thus driving up our beef prices.

Beef Cuts



Lowering Your Meat Costs

Buy from the weekly specials that offer more than 10 per cent off regular prices.

It is not possible for a consumer to predict when prices will be at their lowest, according to Jean-Pierre Potvin, marketing advisor with the Quebec agricultural department.

He advises that the best strategy is to buy specials that are reduced by at least 10 per cent. Chain grocery stores, he explains, think that specials on beef bring in customers. Beef specials are often sold at cost instead of the usual 15 or 17 per cent markup.

Even the holiday turkey price is difficult to predict. Chains often sell it at a loss to attract customers. Potvin has noticed a consumer trend to switch to another meat if turkey prices are too high just before a big holiday. The alert consumer can only watch prices and try to buy when the price seems particularly low.

Barbecue steaks in the summer are a bit more predictable. Once a steer is slaughtered, the whole thing has to be sold. Raising prices on choice barbecue cuts helps sell the less desirable cuts.

One sure way to cut your food budget is to serve meat less frequently and in smaller portions. Get to know the various cuts and grades of meat and the best methods of preparing them. Cuts will differ in price and cooking method, but not much, if at all, in nutritional value. Liver, hamburger and chuck blade are usually the best buys, followed by turkey, chicken and pork.

Smaller cuts of the same meat generally cost more per kilogram than larger cuts, which require less handling and packaging. You can save a significant sum of money by buying larger cuts, particulary "on special", doing some simple cutting yourself, then freezing the cuts you don't need immediately.

Aim for the most servings per kilogram. Many lean beef cuts are cheaper per serving than other meats, such as poultry, because they have less bone, fat and gristle. For example, a 1.25 kg chicken will serve four, and so will 400 grams of ground beef.

Another easy way to save money is to buy the less popular, low-priced cuts. Some of the best buys in terms of both nutrition and cost are the organs, such as liver, heart and kidneys. These have long been gourmet favourites.

Birds weighing more than 5.5 kilograms give the most servings for

your money. Whole birds are usually cheaper per kilogram than cut-up birds or parts. Buy the whole bird and cut it up yourself.

Ground beef for hamburgers should be chosen by price. The cooked hamburger has the same amount of fat whether you started with ordinary ground meat or lean ground meat.

To find the best buy, multiply the cost per kilogram by 100 and divide by the amount of lean meat contained in the ground meat. Regular ground meat must contain at least 70 per cent lean; medium, 77 per cent lean; and lean, 83 per cent.

For example, to find how much you are paying for the lean meat in ordinary ground beef at $4.15 a kilogram, multiply $4.15 by 100 and divide by 70. The ordinary ground beef is generally the best buy.

Cook Meat Properly

With meat as expensive as it is, make sure you cook it properly.

It is traditionally recommended to cook roasts at 160°C (325°F) although the French insist on a very hot oven.

There are two explanations for this difference. Canadian roasts are generally larger and squarer and contain bone. This means the crucial distance from the outside to the centre is much greater, and the heat takes longer to penetrate. A high roasting temperature will mean that the outside will be overdone and the centre raw.

French butchers tie their roasts into a long, slender roll. A small, tender roast will have a nice brown crust on the outside at the same time as the inside is done.

To roast a large piece of meat, say five kg (10 lbs.) or more, a 160°C (325°F) roasting temperature won't overcook the outside before the inside is cooked.

Under 2.5 kg (five lbs.) a 200°C (400°F) oven will have the outside of a tender roast nice and brown at the same time as the inside is done. A meat thermometer will help determine when the roast is done to taste. For a very large roast, so many minutes per pound is a poor guide and for an average roast it is at best an approximate guide.

Low cooking temperatures increase tenderness. It is possible to tenderize a tough cut by roasting it all day at 98°C (200°F). Braising has the same effect, and gives you a rich sauce too. You can add vegetables to the braising pan and have an easy meal-in-one dish.

Here is a guide to approximately how much meat is needed to produce a 90 g (three ounce) serving of cooked meat. The recommended serving of beef liver is a bit lower. Use this to compare the price per serving.

Ground meat	100 g
Liver (60 gram serving)	75 g
Boneless pork or beef roast	115 g
Roast, with bone	135 - 160 g
Boneless steak	135 g
Steak or chops, with bone	200 g
Whole chicken	310 g
Chicken legs or breasts	75 g

Meat Stretching Recipes

When looking for meat-stretching recipes, check cooking styles of people who have traditionally had to make a little go a long way. One word of warning: recipes that have been adapted to North American tastes usually increase the amount of meat considerably.

Chinese and Far-Eastern cooks often use salted meat and then serve it with copious amounts of unsalted rice. Indian and African cooks often spice their meat dishes heavily and serve them with a bland root such as yam or manioc or a cereal such as rice or millet.

Another idea for reducing meat consumption is to plan the meal around a vegetable, rather than meat. Stuffed squash, pumpkin, potatoes and onions are examples.

The Italians have another trick. They serve a hearty soup or spaghetti with sauce to start the meal. The spaghetti sauce rarely contains meat, although it may be made from the broth of the main course meat. Fattening? Not really, if you plan well. For example, spaghetti with a tomato sauce and a dusting of cheese provides cereal, vegetables and a small amount of dairy product. The main course can be a small quantity of meat and a green, low-calorie vegetable such as spinach, broccoli or zucchini.

Leftover meats are like money in the bank. They can be a great help when you are in a hurry.

It is sometimes a good idea to plan on leftover roast. Try putting it in a potato salad for a quick meal-in-one. Or slice it thinly, cover with broth and bits of fried bacon, mushrooms and onion, and a dusting of grated cheese or breadcrumbs and do it *au gratin* under the broiler. Leftover cooked roast can also be part of a buffet platter of cold cuts.

Put leftovers between layers of your favourite scalloped potato recipe. In small pieces, use them to fill an omelet, or add them to a soup Ground in a grinder or food processor they can be used in shepherd's pie, meat balls or stuffed vegetables.

Bones, either cooked or cut out before cooking, can be saved in the freezer until there is enough for a soup or stock. The stock can be kept in containers or ice cube trays in the freezer, ready for any gourmet dish calling for stock.

Contributor Dorothy Chenier is the assistant publisher and food editor of Wine & Dine, a quarterly magazine.

- From the nutritional point of view, less tender, and cheaper, cuts are as valuable as the best steak, and often contain less fat.
- It is difficult to predict meat prices. The best money-saving strategy is to buy specials that are reduced by at least 10 per cent.
- Buy larger cuts and learn how to cut them up yourself. They are usually cheaper than smaller ones.

ALTERNATIVES TO MEAT

Probably one of the highest priced items on your food bill is meat. Meat is a major source of protein and other important minerals and vitamins. It is also responsible for a major part of your daily energy requirements. Finding ways to lower your meat costs can assist you in lowering your weekly and monthly food bill. One such method may be to serve a meatless meal and if that is successful to try an entire day or week without meat. When serving a meatless meal, it is important to select the correct combination of foods in order to make a "complementary protein".

Protein is made up of substances called amino acids. There are 22 amino acids. Eight amino acids cannot be made by the body and must be obtained from the food we eat. These eight are called <u>essential amino acids</u>. The remaining 14 amino acids can be made by the body and are called <u>nonessential</u>.

Meat, fish, eggs, and milk products contain all the essential amino acids in amounts needed by the body. These food sources are called <u>complete proteins</u>.

Whole grains, legumes (dried beans, peas and peanuts) and seeds contain most of the essential amino acids, but lack or are low in one or two. These food sources are called <u>incomplete proteins</u>.

Incomplete proteins can be combined to make complete protein sources. *These combinations are usually <u>less</u> <u>expensive</u> than meat as a source of protein.

On the attached page is a chart that shows you how to combine protein to obtain a complete protein source. NOTE: Not all foods of one group, i.e. legumes, when combined with foods from another group, i.e. whole grain group, make a complete protein source.

For more information on high protein meatless cooking read:

"DIET FOR A SMALL PLANET" (revised 1975) by Frances Moore Lappe.

SIMPLE WAYS OF COMPLEMENTING PROTEIN

There are many ways of complementing protein, some simple, such as the suggestions below. For more complicated recipe suggestions, please refer to *Diet for a Small Planet* by Frances Moore Lappe.

SIMPLE WAYS OF COMPLEMENTING PROTEIN -- Examples

Milk & Rice -- rice pudding; rice baked or cooked in milk; cheese added to a rice casserole.

Milk & Wheat - glass of milk and a slice of whole grain bread; cheese sandwich;
- bread made with milk or milk powder added (NOTE - only 2 tablespoons of non-fat dried milk added to one cup of wheat or rye flour increases the protein quality by about 45%).

Milk, Corn & Soy - corn bread with added soya flour served with a glass of milk or a slice of cheese.

Milk, Wheat & Peanuts - baked goods made with skim milk powder, whole wheat flour and chopped peanuts (i.e. cookies, cake or loaf).

Milk & Sesame - baked goods made with added skim milk powder and sesame seeds.

Milk & Beans
- glass of milk with a serving of beans;
- beans served with cottage cheese or slice of hard cheese;
- bean soup made with milk added.

Milk & Potatoes - scalloped potatoes made with milk and a cheese crust.

Legumes & Rice - rice and beans served separately or combined in a casserole.

Soybeans & Rice & Wheat - casserole made with soybeans and rice served with a slice of whole wheat bread.

Beans & Wheat - baked beans served with a slice of whole wheat bread.

Beans & Corn - baked beans served with corn bread.

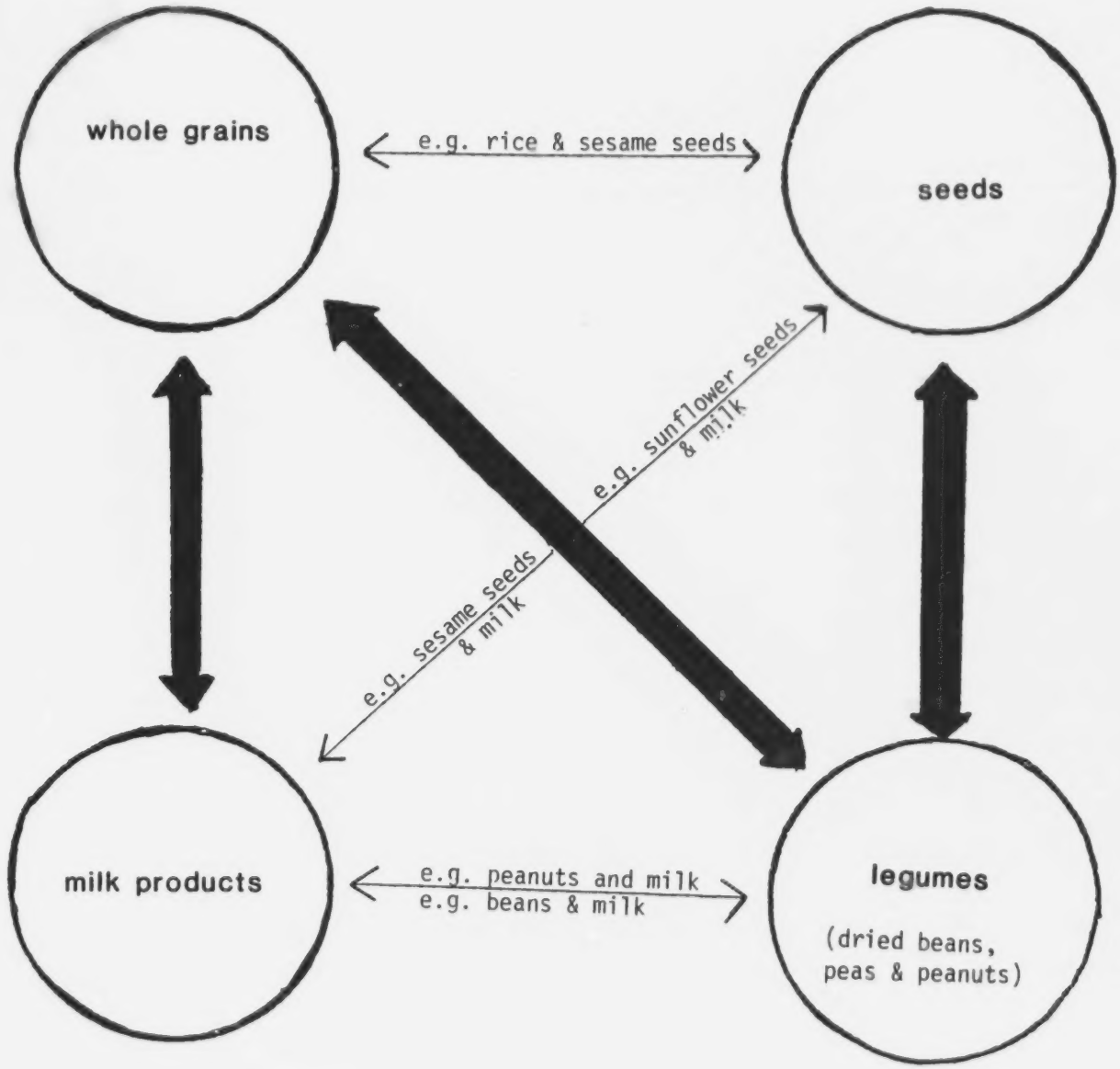
Wheat & Rice - serving of rice with slice of bread.

Soybeans, Peanuts & Sesame

Soybeans, Peanuts & Wheat & Rice

Soybeans, Peanuts, Rice & Sesame Seeds

Summary of Protein Complementarity



Complementarity confirmed between several items in each group

Complementarity confirmed between only a few items in each group

The Grocery Store Game

III. THE GROCERY STORE GAME

1. Guide
2. The Grocery Store Game
3. Label Talk
4. Every Label Tells a Story
5. The Food Label Game
6. The Price is Right
7. Examples of Grading
8. Grades for Canned Fruits and Vegetables
9. Brand Names and Labelling Games
10. A Case for Comparison

SECTION 111
THE GROCERY STORE GAME
Guide

Many consumers have experienced arriving home from the grocery store with items in their shopping bag that they had not planned to purchase. What they may not know is that the store had used a variety of techniques to encourage them to make these unplanned and often unnecessary purchases. Taken one by one, these purchases may not add a great deal to their food bill. However, if the total cost of these unneeded purchases was calculated, consumers probably would find that such unnecessary spending had "eaten" a rather large hole in their food budget. Any savings realized by careful pre-store planning quickly disappears with this "impulse buying". The key to avoiding this in-store "overspending" is awareness — an awareness of the merchandising techniques used to motivate such spending and an awareness of the shopping skills needed to counteract these motivational techniques. This section aims to do two things:

1) Acquaint consumers with some of the in-store merchandising techniques used to motivate their "impulse buying".
2) Suggest some methods of counteracting these selling techniques through improvement of present shopping habits or the development of some new shopping skills.

By increasing the consumer's awareness, it is hoped that the food consumers buy will be the items they want on their cupboard shelves, not the food the stores want off their shelves.

As a starting point, the question sheet, "The Grocery Store Game" has been designed to acquaint consumers with some of the more common merchandising tech-

niques used by stores. An answer key provides answers to the questions and presents some additional information for consideration.

Once the consumer is aware of some of the more common motivating merchandising techniques, the next set of exercises suggest a few ideas for counteracting their influence. "Label Talk","Every Label Tells a Story" and "The Food Label Game" offer some suggestions for gathering and using the information found on food labels to assist you in getting value for your dollar. "The Price Is Right" offers you an opportunity to practice your unit pricing. Price per litre, gram, package, can or bottle is one way of effectively comparing prices. Two information sheets "Examples Of Grading" and "Grades For Canned Fruits and Vegetables" explain the grades found on packaged and canned fruits, vegetables, eggs and meat. This section also helps you examine your susceptibility to advertising through the purchase of brand name products. "Brand Names and Labelling Games" suggests one method of comparing the brand names consumers usually purchase with those most commonly advertised on T.V., radio or in their local paper. By being aware of our susceptibility to brand name purchasing, we can make a conscious choice whether to purchase less expensive, no-name, or in-store brands or to continue to purchase the brands advertised most often. Finally, the fact sheet "A Case for Comparison" suggests that shopping by serving size rather than price per kilogram will save you money. Shopping by serving size assists the consumer to more accurately estimate the amount and thus the cost of the meat you need. This method also helps avoid the age old problem of leftovers and waste.

The Grocery Store Game

Every grocery store uses certain sales techniques and methods to get you to buy. Being aware of these techniques can help you to get value for your food dollar. To test your awareness of these techniques, complete the following activity by checking (✓) the phrase that most correctly finishes the sentence.

1. Most grocery stores are planned with necessary items such as meat, produce and dairy products along the outside walls. These floor plans are designed to:

   _____ make your shopping more interesting and lively.

   _____ give you more room to navigate.

   _____ tempt you to cover as much of the store as possible, and thus hopefully buy more.

   _____ give you more time to remember what you forgot to put on your list.

2. Grocery stores often have at least one "weekly special" which is a product sold at a greatly reduced price. They advertise these "loss leaders" because:

   _____ they want to sell extra stock.

   _____ they hope to attract your attention so you'll buy more.

   _____ they wish to attract you to their particular store.

   _____ they made too much money last week and can afford the reduced price.

3. You will often find food with a higher price tag on shelves that are:

____ at waist level.

____ at eye level.

____ at knee level.

____ on the floor.

4. Food sells best when it is placed:

____ on end-aisle shelves (commonly called bunkers).

____ separate tables in the aisles.

____ shelves against outer walls of the store.

____ on carts moved about the store from time to time.

5. Multiple pricing (2 for 49¢, or 3 for 87¢) is one pricing method that stores use to:

____ help the consumer buy more at a cheaper price.

____ clear their shelves of old stock.

____ psychologically push the consumer into purchasing more than one item.

____ see if consumers can multiply and divide.

6. The average shopping trip takes 30 minutes. There are 10,000 - 14,000 items in a supermarket. Thus the consumer passes from 320 to 450 items per minute. Since the decision to buy is usually made in 1/5 of a second, the consumer must be careful not to yield to:

____ impulse buying.

____ stopping for a nap.

____ researching new products.

____ putting everything back on the shelf and returning to shop tomorrow.

7. More and more space in supermarkets is being given to non-food items. This trend:

_____ makes the consumer feel comfortable about shopping in this particular store.

_____ fills the supermarket with goods that have a high profit margin and will not spoil.

_____ sets the stage for a large amount of "impulse buying".

_____ gives the consumer a chance to have an oil change while shopping for groceries.

8. Makeshift signs, often handwritten, which use words such as SPECIAL or NEW, are used to:

_____ appeal to consumers who don't have much money.

_____ suggest to the consumer that they are getting a today-only bargain.

_____ cut costs as more sophisticated signs cost a lot of money.

_____ advertise a new product just out on the market.

9. Salad dressings found near produce, can openers found near canned juices, wicker baskets found near fresh fruit are good examples of:

_____ one stop shopping.

_____ tie-in sales or hitchhiking.

_____ the store attempting to get your attention.

_____ the store wanting to get rid of extra stock and giving the consumer a price break.

THE GROCERY STORE GAME - ANSWER KEY

1) Most grocery stores are planned with necessary items such as meat, produce and dairy products along the outside walls. These floor plans are designed to "TEMPT YOU TO COVER AS MUCH OF THE STORE AS POSSIBLE, and THUS HOPEFULLY BUY MORE".

   Supermarkets are carefully planned and the direction we travel through it is usually pre-determined. The staples of our diet are dairy products, produce and meat. These are placed around the periphery or outside walls of the store to facilitate the greatest customer circulation. Produce is usually located near the most used entrance as it is a high impulse item. It is also a highly perishable item so stores wish to move produce as quickly as possible. By placing produce at the beginning of your shopping trip, the buying habit is started by this "high impulse" item and will hopefully continue throughout the rest of your shopping trip. Dairy, milk, eggs and butter are usually located at the back of the store. If we run out of them we will often make a trip to the store mid-week to buy only these items. By locating these products at the rear of the store the shopper will have to pass all the displays and specials that have been set up and thus be tempted to buy. The basic principle of food merchandising[1] can be stated as follows: "rate of exposure is related to the rate of sale." The more you are exposed to the more likely you are to buy.

2) Grocery stores often have at least one "weekly special" which is a product at a greatly reduced price. They advertise these "loss leaders" because "THEY WISH TO ATTRACT YOU TO THEIR PARTICULAR STORE".

   Loss leaders bring you into the store and once you are there you are very likely to purchase all your groceries from that store.

3) You will often find food with a higher price tag on shelves that are: at "EYE LEVEL". Goods sell best when they are located at the eye level of the shopper. "Tests of customer behaviour conclude that the same items sold 66% more during a two week period when raised from waist to eye level and a whopping 400 to 500% more when raised from floor to eye level.[2]

4) Food sells best when it is placed "ON END AISLE SHELVES (Commonly called BUNKERS)".

   These are considered to be prime selling locations. Stores have found that these shelves are good spots to feature new products because of their high circulation positions.

5) Multiple pricing (2 for 49¢, or 3 for 87¢) is one pricing method that stores use to "PSYCHOLOGICALLY PUSH THE CONSUMER INTO PURCHASING MORE THAN ONE ITEM."

Multiple pricing (3 for 79¢), psychological pricing (99¢) and variable pricing, (2 for 79¢ this week and 3 for 87¢ next week) are all techniques that are used to get us to become less price conscious and thus buy more.

Multiple pricing such as 2 for 49¢ rather than 1 for 25¢ encourages consumers to buy 2 rather than 1. The higher the multiple number 4, 6, 8, the greater the rate of sale. We tend to think bargain because we assume that buying 2 costs less than buying one at a time. If it says 3 for 67¢ how many do we usually buy?

Psychological pricing (99¢) makes us tend to think 90¢ rather than the $1.00 which is what it really costs.

Variable pricing (2 for 67¢ this week and 3 for 89¢ next week) confuses consumers and makes them lose their price consciousness. It becomes more difficult to remember the individual price from one week to the next.

6) The average shopping trip takes 30 minutes. There are 10,000 - 14,000 items in a supermarket. Thus the consumer passes from 320 to 450 items per minute. Since the decision to buy is usually made in 1/5 of a second, the consumer must be careful not to yield to "IMPULSE BUYING".

All supermarkets rely heavily on impulse buying. Over 50% of all purchases in these stores are made on impulse and supermarkets spare no effort or expense to exploit this fact . . . Every minute over 30 spent in a supermarket adds $1.00 to the bill of an average shopper. The more time one stays in a supermarket, the more s/he is subject to the pressures of impulse buying.[3]

7) More and more space in supermarkets is being given to non-food items. This present trend "FILLS THE SUPERMARKET WITH GOODS THAT HAVE A HIGH PROFIT MARGIN AND WILL NOT SPOIL".

Supermarkets are designed to encourage consumers to buy "high impulse" profit items. The mark-up on these items is 35% - 55% while on food it is approximately 17%.[4]

8) Makeshift signs, often handwritten, which use words such as "SPECIAL" or "NEW" are used to "SUGGEST TO THE CONSUMER THAT THEY ARE GETTING A TODAY-ONLY BARGAIN".

Hand written signs tend to catch our eye and focus our attention on a particular product. Because the signs appear to be amateurish and the consumer assumes the product is a special being offered today.

9) Salad dressing found near fresh produce, can openers found near canned juices, wicker baskets found near fresh fruit are good examples of "TIE-IN SALES or HITCHHIKING".

This sales technique is used to encourage the consumer to purchase unnecessary items. If you buy the main item, perhaps you will buy the companion product even though you had not thought it was necessary until it was subtly suggested to you.

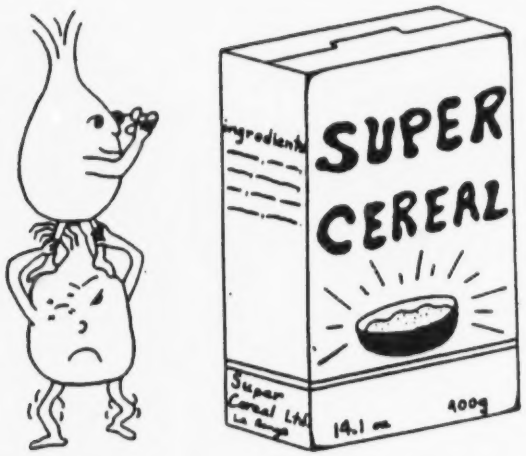
[1]Ontario Public Interest Research Group, The Supermarket Tour: A Handbook for Education and Action, (Waterloo, Ontario, 1979) p. 21.

[2]Michael S. Lasky, The Complete Junk Food Book (New York: McGraw-Hill, 1977) p. 16.

[3]Bill Oldfield, Market Master (Kitchener, 1979)

[4]Ontario Public Interest Research Group. The Supermarket Tour: A Handbook for Education and Action (Waterloo, Ontario, 1979) p. 8.

LABEL TALK



Labels on supermarket products give consumers the opportunity to make sure they are buying nutrition when they are buying food. To see how careful a label reader you are, mark each sentence true (T) or false (F). You may wish to refer to the enclosed pamphlet "Every Label Tells A Story" to help you answer the questions. Check your answers with the answer key attached to this sheet.

1. Bread must always show the list of ingredients on the label. _____

2. On a label, "Fruit Juice" means the same as "Fruit Drink". _____

3. The labels on "food" products (e.g. tomato soup) must give you the same information you would find on a "non-food" label. (e.g. shampoo). _____

4. The net weight of a package includes the weight of the contents as well as the package itself. _____

5. If the number of servings is shown, then the size of each serving must also be given. _____

6. "Best Before" dates are on all pre-packaged foods. _____

7. A label must list the ingredients of a pre-packaged food in order of the largest quantity to the smallest quantity. _____

8. If the label on a package of fish shows a picture of five fish, then there must be five pieces of fish in the package. ____

9. If the label says "no preservatives added", it means that the food contains no preservatives. ____

10. Labels on food products must list the unit price (price per kilogram) of the product. ____

11. The common name and the brand name are always the same. ____

12. Fresh meat, fish and poultry packaged in the store must show a "packaging date" rather than a "Best Before" date. ____

13. The word "enriched" means that some vitamins and minerals have been added to the food. ____

14. Foods cannot be eaten after the "Best Before" date has passed. ____

15. A yogurt container which shows peaches on its label must have peaches in it. ____

16. If meat has been previously frozen then the package label must bear the words "previously frozen". ____

17. When foods are bought unpackaged, (e.g. fresh vegetables), no "Best Before" date is needed. ____

18. If the food requires special storage conditions, then those conditions must be stated on the label. ____

19. The name and address of the seller must appear on the label. ____

20. Stores must remove the food product from their shelves once the "Best Before" date has expired. ____

ANSWER KEY TO LABEL TALK

In Canada, the labelling of food and non-food products is governed by the Packaging and Labelling Act. For further information about the Act, refer to the enclosed pamphlet, "Every Label Tells A Story".

1. FALSE. If the bread is made and sold within the store, then the package does not have to show a list of ingredients. However, if the bread is brought to the store pre-packaged, it must show a list of ingredients somewhere on the package.

2. FALSE. Fruit Drink may contain no fruit juice.

3. FALSE. Labels on "non-food" products must give you the following basic information: common name, net quantity, name and address of the company or distributor and usually the brand name. Labels on "food" products must give you the above information plus a list of ingredients. Other information may be required on the label of particular food products. For example, a milk carton must state the special storage conditions "keep refrigerated" on the label.

4. FALSE. The net weight refers only to the weight of the <u>contents</u> of the package.

5. TRUE. If the label indicates the number of servings in the package, it must also give the size of each serving by weight or volume.

6. FALSE. Only foods that have a durable life of 90 days or less (perishable foods other than fruits or vegetables) must have a "Best Before" date.

7. TRUE. Under the Packaging and Labelling Act the ingredients of a food product must be listed in descending order of proportion.

8. TRUE. The picture on the label must give a fair representation of the product within (e.g. if meat is shown on the picture on a label of beef stew, then there must be at least one piece of meat in the stew).

9. FALSE. The phrase "no preservatives added" means that there have been no preservatives added during the preparation of the food. However, any of the ingredients added to the food during its preparation may contain a preservative. For example, white flour that is added to bread may contain chlorine which is a preservative. The baker can, however, state on the label "no preservatives added" as s/he did not add even though the white flour s/he used contained preservatives. The phrase "no preservatives" means the food contains <u>no</u> preservatives.

10. FALSE. Unit pricing is a calculation of price per unit that is a convenience some stores may offer their customers. It is not a mandatory or legal requirement of any of the legislation governing the packaging or labelling of food.

11. FALSE. The common or generic name tells the consumer the kind of product s/he is purchasing (e.g. tomatoes) while the brand name or trademark is the name under which the product is sold. The brand name allows consumers to differentiate between different brands of the same food product.

12. TRUE. If the fish, meat or poultry has been packaged in the store, the date on the package shows the packaging date rather than the "Best Before" date.

13. TRUE. "Enriched" means that some vitamins and minerals have been added to make the food more "nutritious".

14. FALSE. The "Best Before" date is put on all food that could spoil within 90 days or less. The date tells the consumer after what date the food may no longer be at its top quality. The food may still be eaten after the "Best Before" date has expired. However, it may not be as nutritious.

15. FALSE. Check the label to see if the food contains an artificial fruit flavoring. The picture of a peach or some other natural food on the label does not mean the product contains that food.

16. TRUE. The label may be stamped with the phrase "previously frozen" or a sign near the meat counter may indicate that the food has been previously frozen.

17. TRUE. "Best Before" dates are needed on all pre-packaged foods that may spoil within 90 days or less except unpackaged fresh fruits and vegetables.

18. TRUE. If the product requires unusual storage conditions such as refrigeration then the label must state these conditions.

19. FALSE. The name and address of the manufacturer or distributor, not the seller, must appear on the label.

20. FALSE. The store does not need to remove the food product from the shelf. It is up to consumers to check the "Best Before" date before they buy.

Every Label Tells A Story

Non-Food Products

Labels on *non-food products* must tell you the following information:

1 This is my *common* or *generic* name. It simply tells you what kind of product you're buying. In this case, I'm a bottle of shampoo.

2 My *brand name* or trademark is often how I'm best known. My company uses my *brand name* so you can tell me from my competitors.

3 This is my *net quantity*, the amount of my contents inside. The size and shape of containers and packages can sometimes fool your eye. So the *only* sure way to know how much is inside is to read my label. As more and more of us are showing our *net quantity* in metric units only, it will become easier to do comparative shopping. Some manufacturers may take the opportunity to standardize sizes at the same time.

4 If you have a problem, the store where you bought me will probably try to help. But if you want to contact my manufacturer or distributor directly, *the name and address of my company* will be on the label.

Food Products

Labels on *food products* must tell you the common name, net quantity, the name and address of the company and usually carry the brand name, just as *non-foods* do.

In addition, the list of ingredients *must* be on all pre-packaged food products.

5 My *list of ingredients* is one of the most important pieces of information I can give you. My ingredients are listed in *descending* order. The one which weighs the most comes first and so on. It can also be given in percentages, again in descending order. This helps tell you if "meat stew" actually has more vegetables than meat or if breakfast foods have more sugar than cereal.

Plus some of the following information under certain conditions:

6 If my *number of servings* is shown, I'll give you the size of each serving as well.

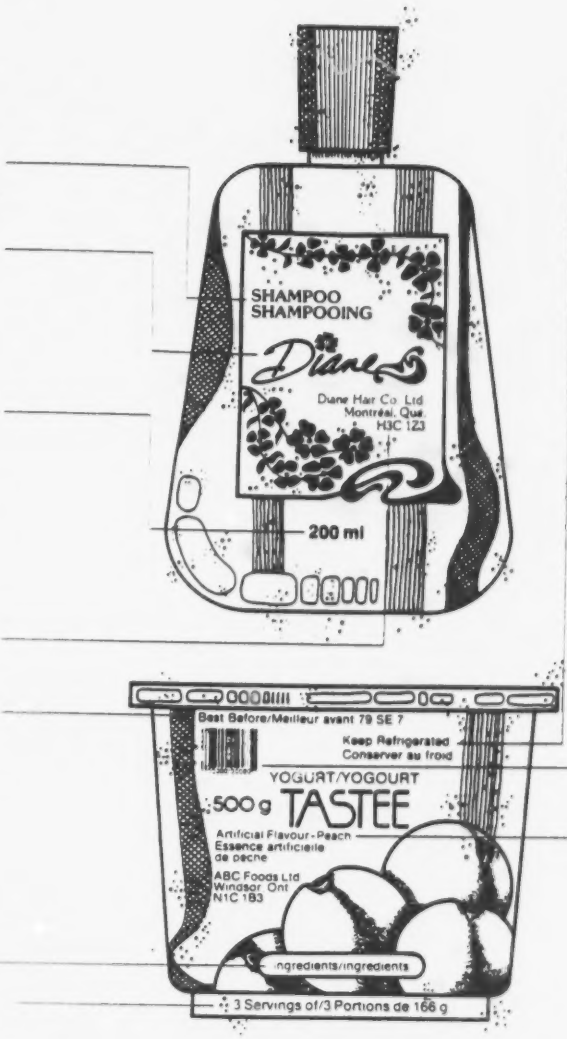
7 My *Best Before* date tells you how fresh I am. It's on all perishables except fresh fruits and vegetables and it lets you know after what date I am no longer at my top quality. After that, I may be edible when you buy me, but I may not be in top form. It's *best* you check, *before* you buy.

8 This tells you where and how to store me if I can't survive at room temperature.

9 This is my "Universal Product Code Symbol". It's used in stores with automated check-out systems. The lines and numbers tell a computer the name and manufacturer of each product. This is then automatically printed along with the price on your register tape.

10 If there's artificial flavour in me, I'll tell you. Just because there's a picture of a peach or some other natural food on me, don't presume I contain that natural food. So that you'll know for sure, the words "artificial flavour" will always be nearby.

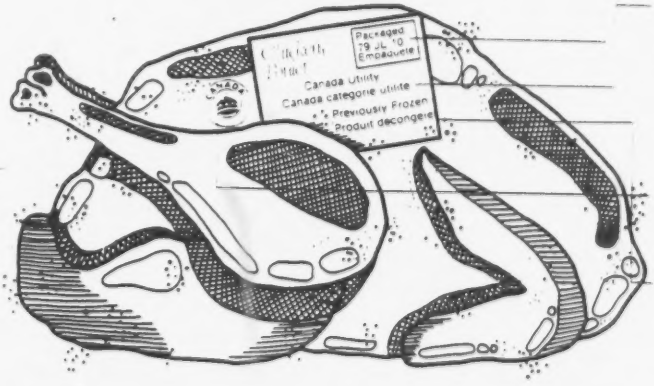
11 Although I've not been enriched or fortified with added vitamins or minerals, some of my best friends, like white bread, have been. In their cases, it will always be clearly marked. And it's the *total amount* of the nutrient in the food that's listed.



Meat, Fish and Poultry

Some special information about meat, fish and poultry.

12 My *packaging date* tells when I was packaged. Near the display counter a sign will tell you the *refrigerated storage time* of each product. This lets you know how long you have before you must cook or freeze me.
So, if I was packaged on July 10th (79 JL 10), and my *refrigerated storage time* is two days, you have until July 12th before cooking or freezing me.



13 Words such as Canada Utility or Canada A are your guarantee I've been graded according to federal standards.
All grades are equally nutritious, but my flavour and tenderness differ from grade to grade. Learn what they mean so you can use the right grade for your needs.

14 This symbol tells you that I have been inspected by *Agriculture Canada*. It doesn't indicate quality or grade.

15 This lets you know I was *previously frozen*, then allowed to thaw. For your own safety, use me right away or cook me before re-freezing.

From: Every Label Tells a Story. Consumer and Corporate Affairs Canada.

Food Label Game

Try to guess what these everyday foods are. In CANADA, the ingredients must be listed on the label in order from the largest quantity to the smallest.

1. Corn syrup solids, coconut oil, sodium caseinate, mono and diglycerides, potassium phosphate, dibasic, sodium aluminum silicate, lactic acid, artificial flavours, acetic acid and colour.

2. Pork, beef and/or pork by-products and/or mechanically deboned beef and/or pork; water, flour, salt, sugar, sodium erythorbate, sodium nitrate.

3. Sugar, dextrose, citric acid, trisodium citrate, natural flavour (contains BHA - a preservative), gum arabic, tricalcium phosphate, artificial flavour, maringin, vegetable shortening, vitamin C (214 mg per 100 g) food colour.

4. Sugar, enriched flour, vegetable oil, shortening (cocoa, dextrose)* baking powder (modified starch, salt), propylene glycol mono fatty acid esters, may contain carboxmethyl cellulose or guar gum, natural and artificial flavours. * order may vary within the brackets.

5. Carbonated water, sugar, caramel colour, phosphoric acid, natural flavours, caffeine.

6. Sugar, salt, spices, dehydrated garlic, monosodium glutamate, lemon powder, dehydrated onion, hydroloyzed. Vegetable protein, cornstarch, citric acid.

7. Sugar, hydrogenated vegetable oil (contains modified palm kernel oil and palm oil), lactose, sodium caseinate, whey powder, acetylated monoglycerides, hydroxylated soyabean lecithin, propylene glycol monosterarate, artificial flavour, food colour.

FOOD LABEL GAME - ANSWER KEY

The ingredients on food labels are listed in descending order of proportion. Whatever is listed first is what there is most of in that particular food. By reading carefully the list of ingredients found in any particular food product consumers can discover if they are getting nutritional value for their money or large amounts of unwanted substances such as sugar, salt and/or chemical additives.

1. COFFEE MATE - Coffee mate has a high sugar content (approximately 65%) found in the form of corn syrup solids.

2. PREM LUNCHEON MEAT - Note that this luncheon meat contains sugar. As well it contains sodium nitrate, an additive about which there has been some concern lately.

3. TANG - Dextrose is another form of sugar which means that the first two ingredients listed are sugars. As a result Tang has a high sugar content. Although Tang contains some Vitamin C it does not contain as much as canned or frozen orange juice.

4. DUNCAN HINES DELUXE II CAKE MIX, SWISS CHOCOLATE FLAVOR - Note that this cake mix contains two kinds of sugar in the form of sugar and dextrose.

5. COCA COLA - A twelve ounce bottle of Coca Cola contains 9 teaspoons of sugar. of sugar. Note the presence of caffeine, a substance which has been linked to irregular heartbeat and insomnia.

6. LAWRY'S OLD FASHION FRENCH DRESSING MIX FOR SALADS - Note the high sugar and salt content in this food.

7. DREAM WHIP - Sugar appears in two forms in this food (sugar and lactose).

The Price Is Right

Unit pricing or calculating the cost per litre, gram, can or package is one way of comparing the cost of similar products. Which food product is the better buy in each of the following situations?

_____ 1. a) a 500g jar of peanut butter at $1.39

b) a 500g jar of peanut butter at $1.65 for which you have a 15¢ off coupon

_____ 2. a) a 300g package of cereal with 10 small packages in it selling for $3.58

b) a large 525g package of cereal selling at $2.65

_____ 3. a) 1.15ℓ can of juice at $1.91

b) 5 small cans (200 ml each) at $1.60

_____ 4. a) 1.5 kg package of skim milk powder (makes 15 litres) at $6.85

b) litre cartons of fresh milk at 69¢ per litre

_____ 5. a) canned beans at 2 for 79¢

b) canned beans at 41¢ each

_____ 6. a) a 450g package of sliced cheese at $3.37

b) a 907g package of unsliced cheese at $4.54

_____ 7. a) 2.5 kg of flour at $1.61

b) 10 kg of flour at $4.49

THE PRICE IS RIGHT ANSWER KEY

1. a) 500g jar of peanut butter selling at $1.39
   b) 500 g jar selling at $1.50 ($1.65 - 15¢ off coupon = $1.50)
   a) would be the better buy

2. a) $3.58 ÷ 300g = 1¢/g
   b) $2.65 ÷ 525g = ½¢/g
   b) would be the better buy

3. a) 1.91 ÷ 1.15ℓ = $1.66/ℓ
   b) 5 x 200 ml = 1,000 ml or 1ℓ (1,000 ml = 1ℓ) or $1.60/ℓ
   b) would be the better buy

4. a) $6.85 ÷ 15ℓ = 45¢/ℓ
   b) 69¢/ℓ
   a) would be the better buy

5. a) 79¢ ÷ 2 = 39.5¢/can
   b) 41¢/can
   a) would be the better buy

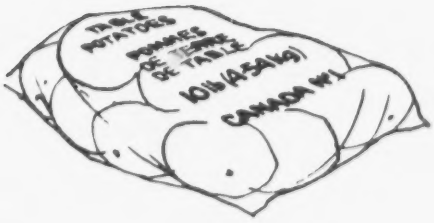
6. a) $3.37 ÷ 450g = 3/4¢/g
   b) $4.54 ÷ 907g = ½¢/g
   b) would be the better buy

7. a) $1.61 ÷ 2.5 kg = 64¢/kg
   b) $4.49 ÷ 10 kg = 45¢/kg
   b) would be the better buy

Examples of Grading

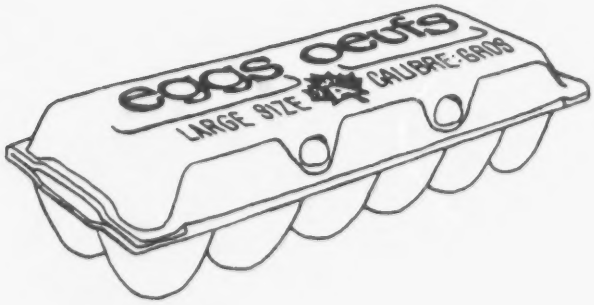
Canned fruits and vegetables have three possible grades:
CANADA FANCY
CANADA CHOICE
CANADA STANDARD

Frozen fruits and vegetables have two grades:
CANADA FANCY
CANADA CHOICE



Fresh fruits and vegetables:
most are graded either: CANADA NO. 1 or
CANADA NO. 2

Pears and apples may be graded:
CANADA EXTRA FANCY
CANADA FANCY
CANADA COMMERCIAL or "C"



Eggs are graded: CANADA A1
CANADA A
CANADA B
plus sizes, for example:
CANADA A LARGE SIZE
CANADA A MEDIUM SIZE

Examples of Grading

Poultry grades: CANADA A
CANADA B
CANADA UTILITY

Health Inspection Stamp

Grade Mark

Note: These examples of food grading were taken from a booklet called "Food Grading in Canada" by Agriculture Canada.

Copies are available by writing to:

Information Services
Agriculture Canada
Ottawa, Ontario
K1A 0C7

Grades for Canned Fruits and Vegetables

The grade marks are: CANADA FANCY, CANADA CHOICE, CANADA STANDARD

All grades have the same nutritional value. The Fancy Grade does not have more vitamins than the other grades.

The three grades differ in appearance slightly:

CANADA FANCY - nicest looking; even sizes; best quality
CANADA CHOICE - slightly older fruits and vegetables; more uneven sizes
CANADA STANDARD - uneven sizes; broken pieces; good for casseroles

The grades may differ in price. The best quality or CANADA FANCY will be higher priced than the other grades. If you are buying the product for its nice appearance this grade might be what you want. The other grades are just as good nutritionally and taste-wise and might be cheaper.

Brand Names and Labelling Games

"One purpose of repeated advertising for any product is to entice us not only to buy a particular type of item but to accept a certain brand name as the almighty. Because we are surrounded by a constant buzz and blurr of brand names, they become part of our world. They are familiar to us and we feel comfortable and safe with them."[1]

Thus when we go to the store these often repeated brand names are the ones we are most likely to remember and buy.

To see how susceptible you are to brand name advertising, complete the following survey.

A. For each of the products listed on the chart on the following page, fill in the blanks in Column A with the first brand name that comes to mind.

B. Then check your cupboard shelves, refrigerator, medicine cabinet for any of the products listed below. List in Column B the brand name of each of the products you have on hand.

C. If possible, listen to the radio, watch television or check the newspapers or flyers for advertisements for any of the products listed. In Column C jot down the brand name that is most often advertised.

Product	Brand Name	Brand Name In Your Kitchen	Brand Name Most Often Advertised
Dish soap			
Peanut butter			
Cereal			
Toothpaste			
Instant coffee			
Laundry soap			
Soft drink			
Orange juice			
Rice			
Fruit drink			

D. After completing the survey consider the following points:

i) compare the number of times the same brand name is listed in all three columns.

ii) compare the number of times the brand names in your cupboard, regrigerator or medicine cabinet was different from the most highly advertised one. If there was a significant difference, why do you think this occurred?

iii) after examining the results of your survey, do you think you are affected by brand name advertising?

[1]Michael S. Lasky, The Complete Junk Food Book, (New York: McGraw-Hill, 1977) p. 11.

A CASE FOR COMPARISON

Try shopping for meat by serving size rather than price per kilogram. This assists the consumer to more accurately estimate the amount and thus the cost of the meat s/he needs. The method is particularly helpful if the meat you are buying contains a bone. You will also be able to avoid the problem of leftovers and waste.

To find the cost per serving, divide the cost per kilogram by the approximate number of servings per kilogram. FOR EXAMPLE: Boneless meat of most kinds (beef, pork, lamb, veal) will serve 7 to 8 people per kilogram. If the cut you buy contains no bone and costs $4.55 per kilogram, then the cost per serving is 57¢ ($4.55 ÷ 8) or 65¢ ($4.55 ÷ 7). If you are having 7 people for supper, then you will be able to buy one (1) kilogram of meat at a cost of 65¢ per serving or person.

The chart below will help you to calculate the cost per serving of other cuts of meat.

CUT OF MEAT	AVERAGE NUMBER OF SERVINGS PER KILOGRAM	PER POUND
beef, pork, veal, lamb variety meats: roasts, chops, ground meat, stewing meat, steaks		
boneless	7 to 8	3 to 4
bone - in (small amount of bone)	5 to 6	2 to 3
bone - in (large amount of bone)	3 to 4	1 to 2
cold cuts	11	5
whole chicken or turkey	2	1
fish (whole round)	2	1
fish (steaks, fillets, fish sticks)	4 to 6	2 to 3
fish (pan dressed head and tail removed, eviscerated)	4	2

SOURCE - FOOD BASICS, Consumer & Corporate Affairs CANADA.

Checking It Twice

CONTENTS OF SECTION IV

1. Guide

2. Checking It Twice

3. Market Master

4. Tips for Buying Food or
   Bringing Home the Bacon

SECTION 1V
CHECKING IT TWICE
Guide

Consumers may be able to lower their grocery bill and still buy nutritious food by incorporating some or all of the ideas outlined in previous sections of this food shopping kit. However, it is also important for you to realize that the shopping trip is not over when you leave the store. To make certain that your shopping habits are effective, you might wish to take a closer look at them. This could be done in the following ways:

First of all, compare your actual purchases with the sales receipt and your original shopping list. By making these comparisons, you are not only checking the accuracy of the sales slip but also your susceptibility to in-store merchandising techniques.

Secondly, you should establish some method of keeping track of the regular and "special" price of items you usually buy. This will allow you to become aware of which items are good buys versus those that are not.

This section "Checking It Twice" provides the consumer with two suggestions for looking at how they shop. The first question sheet "Checking It Twice" suggests a method of analyzing your purchases. By using the questions on the sheet as a guide, you can compare your actual purchases with what you planned to buy.

The "Market Master" booklet outlines a method that will assist consumers to keep track of the sale price of food. This system will take some time and energy, but can, if used correctly, result in a substantial saving on your food bill.

To complete the package and to provide consumers with a summary of some of the money saving ideas suggested throughout, the sheet "Tips for Buying Food - or Bringing Home the Bacon" has been included. This sheet provides a point of reference for quickly reviewing some of the ideas you might wish to research or pursue further.

Checking It Twice

After your next shopping trip, look carefully at your sales slip and/or the products you have purchased. Compare the products you purchased with your original shopping list by doing the following:

A. Divide your purchases into planned (those on your list) and unplanned (those not on your list).

B. Add up the cost of your planned purchases (the products on your shopping list).

C. Add up the cost of the unplanned purchases (those which did not appear on the shopping list).

If you find you have come home with a number of unplanned purchases and would like to look closer at your shopping habits, complete questions D, E, and F found on the next page.

D. Divide the unplanned purchases into 2 groups: "Not Good Buys" and "Good Buys".

E. Add up the cost of each group. Calculate the percentage of your food bill which were "not" good buys. To do this, divide the cost of the "Not Good Buys" by the total food bill and multiply by 100.

e.g. Total cost of "Not Good Buys" was $20.00
Total food bill was $100.00

$$\frac{20}{\$100.00} \times 100 = 20\%.$$

20% of your food bill was considered to be "not good buys" or impulse spending.

F. Divide all your purchases into food and non-food purchases. Add up the amounts spent for non-food purchases. If possible, calculate the percentage of your total food bill spent on non-food items.

Can you think of ways in which you would like to change your shopping habits?

Market Master

As one way of ensuring you are getting value for your food dollar, you may wish to keep track of the sale price of food items you usually buy. This booklet "Market Master" outlines one suggestion for doing this.

INTRODUCTION

1. A majority of food shoppers remember the correct price on only a few of the hundreds of items they buy each month. For example, a recent study conducted in the United States revealed that less than ¼ of food shoppers could come within 5% of guessing the correct price of a well advertised food product usually found in their weekly food basket.[1] Special selling techniques such as price juggling (2/67¢ this week and 3/79¢ next week) tends to pave the way for further confusion and even less "price consciousness".

2. Over 50% of all purchases made in stores are made on impulse. Lack of awareness of prices, the layout of the store, packaging, shelf location, and hand written feature signs are some of the techniques used by the store to encourage the consumer to purchase often unwanted and unneeded items.

3. Over 60% of shoppers do not make shopping lists and those who do, rarely stick to them. Thus the shopper has few defences against the selling techniques used by the store to tempt them to impulse buy.

4. Weekly advertised "specials" are one of the more effective selling techniques used by the supermarket. "Specials" are used to lure consumers into a particular store to buy a particular item and thus hopefully tempt them to stay to do all their weekly shopping.

5. However, weekly advertised specials can be used to the consumer's advantage. Consider the following points:
   a) most of the products used in your home go on "special" at some time or another.
   b) top grade names are often offered at better prices than buying in bulk or limiting yourself to "no-name" products.
   c) these same products are rotated through the supermarket's "special cycle" every 3 to 4 weeks.
   d) these weekly advertised specials have three price levels: shelf price, special prices and super special or BEST PRICE. To get the best value for your food dollar you will always want to buy food at the lowest price possible which is the super special or best price.

The Market Master booklet gives the consumer the opportunity to keep track of these special prices so as to buy a food item when it is offered at its BEST or Lowest price.

INSTRUCTIONS

This booklet contains the following:

1) a set of instructions
2) 5 sets of color coded shopping sheets. Each colored shopping sheet represents a different category: produce, non-foods, canned-packaged foods, meat, dairy-frozen. Individual items are listed in the left hand vertical column with spaces being left for additions or personal preferences. Beside the items column is a "units" column and beside that a column for recording your "Best Prices". Across the top is a column for the names of your nearest/preferred supermarket.

WEEK ONE

1. Use one copy of each of the 5 different shopping sheets.
2. Collect the newspaper/flyer ads sent out by the supermarkets or food stores in your area.
3. Work on only one store at a time. Pencil in the store's name in a space at the top of the page. Select the products your family use and enter the advertised special prices and units on the appropriate shopping sheet.
4. Repeat this process for any other stores you may shop at.
5. Circle the Best/Lowest Price for each special. Each shopping sheet should look like the following example.

	UNITS	BEST PRICE	BLAH BLAH'S	SOVEREIGN	SUPER DEAL	OK WAY
PRODUCE						
BEANS	LB.		.65			.45
BEETS	BUN.		.45	.49	.49	.55
BROCCOLI	LB.		.69	.39	.79	.89
CABBAGE	EA.		.25	.29	.39	.35

ADDITIONAL INFORMATION

1. The Best Price method of buying food operates best with 2 or more stores available to the consumer. Even if only 2 stores are used, this system shows which store best suits the consumer's needs. If there is only one store available, the Market Master system can still be an effective way of keeping track of prices. However, the consumer's menu/diet will be limited because it is closely tied to the cycles in only one store. As well, the difference in the BEST PRICES will not be as great, thus the saving will not be as large.

2. To use this system consumers do not need to change their eating habits, only their shopping habits. . . to buying as many food products at super special prices as possible.

3. Most shopping trips take 30 minutes. Every minute over 30 adds $1.00 to the bill of the average shopper. The longer you spend in the store, the more likely you are to give in to the techniques used to encourage you to impulse buy.

4. Avoid impulse buying - Stick to your list or the savings you realized by careful pre-store planning will quickly disappear.

5. An alert informed shopper can expect to save 10 - 20% of his/her food bill by using the "Best Price" purchasing method.

This version of Market Master was adapted from the Market Master system developed by Bill Oldfield of Kitchener, Ontario.

To secure a copy of Mr. Oldfield's Market Master send $10.50 with your request to:

Mr. Bill Oldfield
168 Samuel Street
Kitchener, Ontario
N2H 1R1

[1] Nutrition Action, "How Stores Manipulate You", November 1979, page 14.

If you wish, you should now be able to determine a partial shopping list from your circled "Best Prices".

6. This "Best Price" is your written record of the lowest price for those products advertised in Week One's ad. In the following 2 or 3 weeks you will be establishing and adding more and more Best Prices. Soon you will have a Best Price established for most of the products you usually use.

WEEK TWO

1. Transfer all the circled Best Prices from Week One to the Best Price columns on the new sheets.

2. Repeat Week One procedure 2 to 5.

3. Because different products have appeared on special this week, your Best Price knowledge and record has increased.

WEEK THREE

1. Repeat all the procedure from Week One.

WEEK FOUR

1. Repeat all the procedures for Week Three.

2. By now you should have the "Best Price" information for over 90% of the products listed on your shopping sheets. Some of the specials from Week One should by now start to be repeated in the ads. This may even occur as early as Week Three. You should by now have a fully operational Market Master system. By constantly using the Best Price reference information you collect weekly, you should be able to control your grocery expenses.

PRODUCE

		UNITS	BEST PRICE				
VEGETABLES	BEANS						
	BEETS						
	BROCCOLI						
	CABBAGE						
	CARROTS						
	CELERY						
	CORN						
	CUCUMBERS						
	LETTUCE						
	MUSHROOMS						
	ONIONS - GREEN						
	ONIONS - COOKING						
	PEAS						
	PEPPERS						
	POTATOES						
	RADISHES						
	SPINACH						
	SQUASH						
	TOMATOES						
	TURNIP						
FRUIT	APPLES						
	BANANAS						
	GRAPES						
	GRAPEFRUIT						
	LEMONS						
	ORANGES						
	PEACHES						
	PEARS						
	PLUMS						

	MEATS	UNITS	BEST PRICE				
BEEF	BLADE ROAST						
	CROSS RIB						
	PRIME RIB						
	RUMP						
	SIRLOIN TIP						
	STANDING RIB						
	CHUCK STEAK						
	ROUND						
	SIRLOIN						
	T-BONE						
	GROUND BEEF						
	LIVER						
	SHORT RIBS						
	STEWING BEEF						
PORK	BACON						
	BUTT ROAST						
	LOIN						
	PICNIC/HAM						
	CHOPS						
	GROUND						
	SPARE RIBS						
	STEAK						
POULTRY	CHICKEN - ROAST						
	- FRY						
	TURKEY						
MISC	COLD MEAT						
	FISH						
	LAMB						
	SAUSAGE						
	WEINERS						

DAIRY/FROZEN

		UNITS	BEST PRICE				
DAIRY	BUTTER						
	CHEESE						
	CHEESE SPREAD						
	CHEESE SLICES						
	CHIP DIP						
	COTTAGE CHEESE						
	EGGS						
	MARGARINE						
	MILK						
	SOUR CREAM						
	YOGURT						
	DESSERT ICE CREAM						
	SHERBET						
	FRUIT						
FROZEN							
	JUICE - LEMONADE						
	- GRAPE						
	- ORANGE						
	VEGETABLES						
	- BEANS						
	- CORN						
	- MIXED						
	- PEAS						

CANNED
PACKAGED FOODS

		UNITS	BEST PRICE				
CANNED GOODS	JUICE - APPLE						
	- GRAPE						
	- GRAPEFRUIT						
	- TOMATO						
	SOFT DRINKS						
	SOUP - TOMATO						
	- MUSHROOM						
	VEG. - BEANS - PORK						
	- GREEN						
	- KIDNEY						
	- CARROTS						
	- CORN						
	- MIXED						
	- MUSHROOMS						
	- PEAS						
	- TOMATOES						
	- TOMATO PASTE						
	- TOMATO SAUCE						
MISC STAPLES	PET FOOD						
	COFFEE						
	FLOUR						
	NOODLES						
	SUGAR						
	TEA						

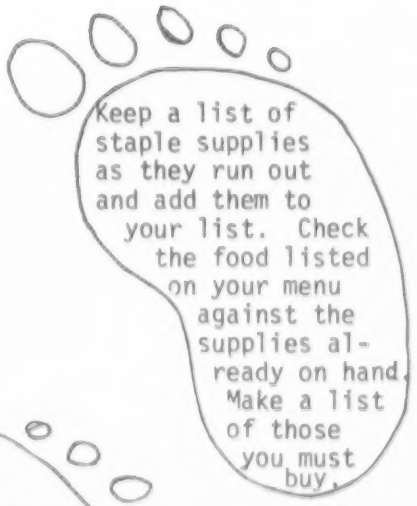
NON-FOODS

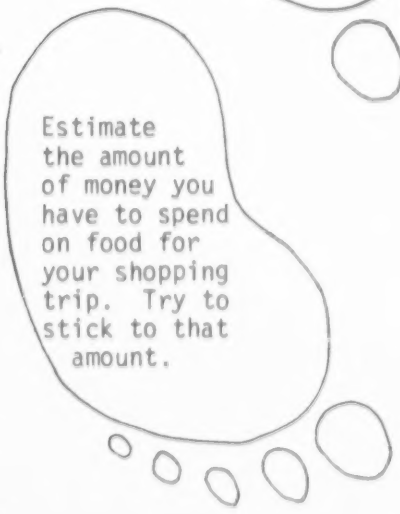
	UNITS	BEST PRICE				
BLEACH						
DETERGENT - DISH						
- LAUNDRY						
GARBAGE BAGS						
PAPER TOWELS						
PAPER NAPKINS						
PLASTIC WRAP						
TIN FOIL WRAP						
TOILET PAPER						

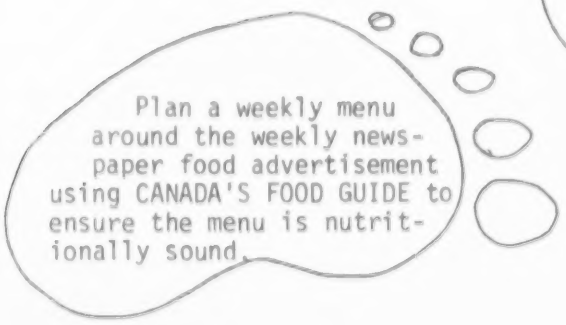
Tips for Buying Food
OR
Bringing Home the Bacon

It pays to be organized before you go to the grocery store. A well planned grocery list is a good start to a successful shopping trip but it is only a beginning.[1] The following tips might be some of the steps you take to saving money on your food bill.

BEFORE YOU LEAVE FOR THE STORE

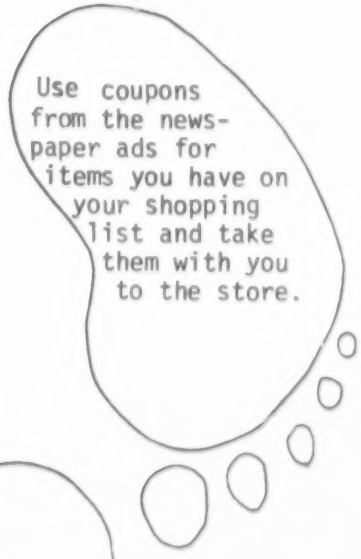

Keep a list of staple supplies as they run out and add them to your list. Check the food listed on your menu against the supplies already on hand. Make a list of those you must buy.

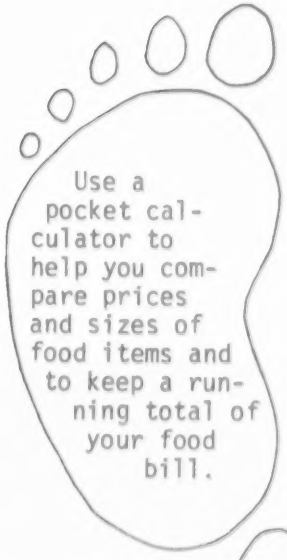


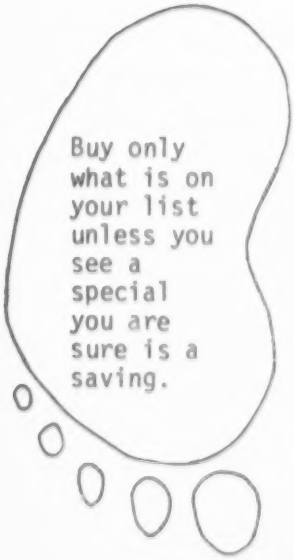

Plan a weekly menu around the weekly newspaper food advertisement using CANADA'S FOOD GUIDE to ensure the menu is nutritionally sound.

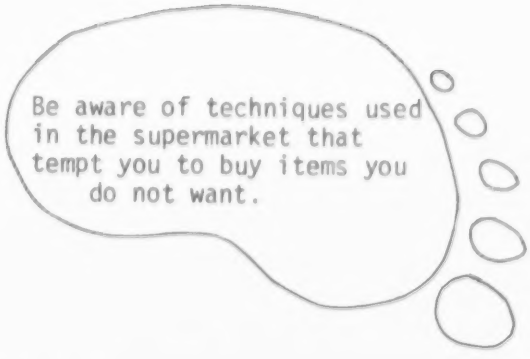
Careful planning before you go to the store is only the beginning. At the store, the consumer must be careful not to yield to in-store influences and be tempted to make unnecessary purchases. Being aware of good in-store shopping techniques is important.

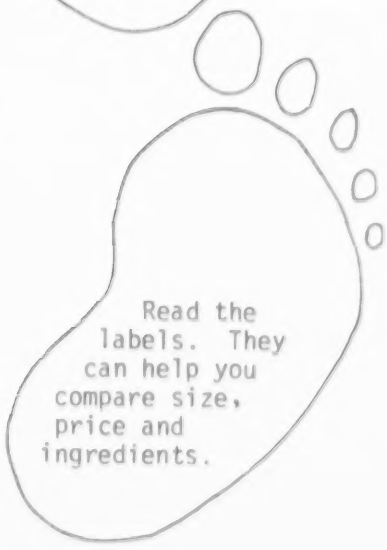
AT THE STORE











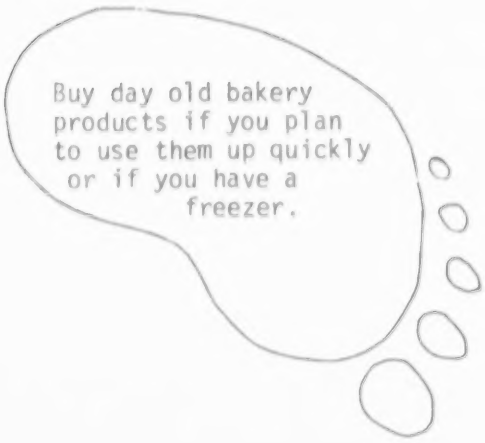
AT THE STORE

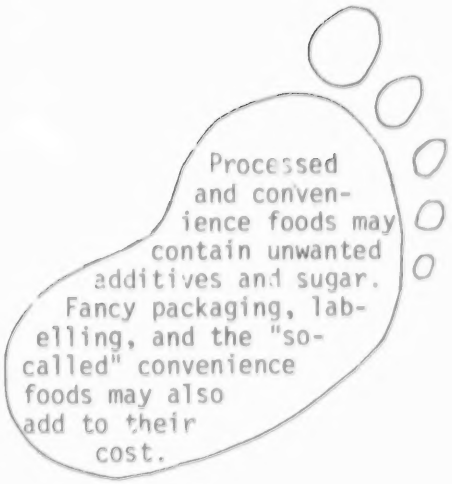
Suit food purchases to purpose: buy lower cost foods for dishes such as stews and casseroles.

Paper products and some canned goods come on sale in monthly or six week cycles. Stock up on these items until the next sale.

Buy specials from the produce department only if you plan to use them quickly.

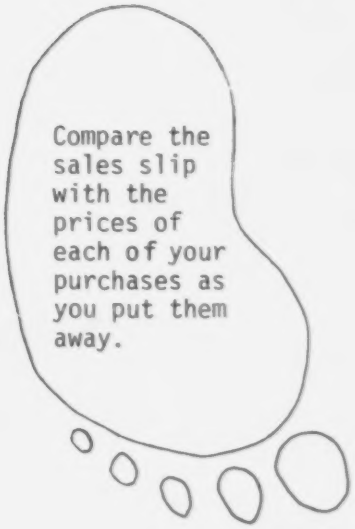
Shopping carefully for meat specials can help you save as much as 5% of your total food bill.

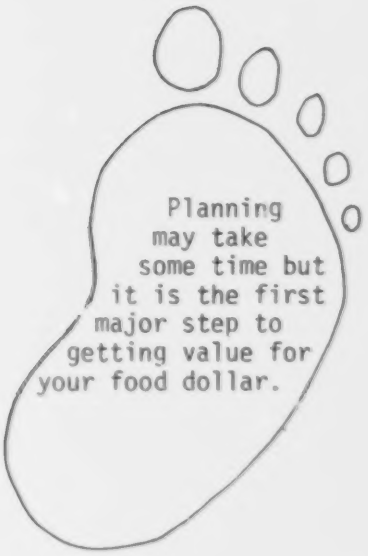

Buy day old bakery products if you plan to use them up quickly or if you have a freezer.

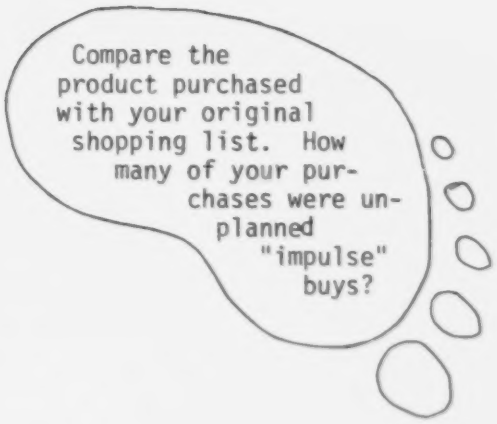

Processed and convenience foods may contain unwanted additives and sugar. Fancy packaging, labelling, and the "so-called" convenience foods may also add to their cost.

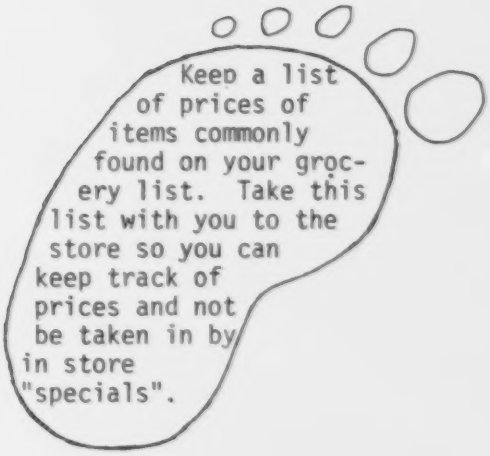
Evaluating your in-store shopping skills can be done after each shopping trip. By comparing the products you purchased with your original shopping list you can very quickly see how skilful a shopper you are.

AFTER YOUR SHOPPING TRIP






Compare the product purchased with your original shopping list. How many of your purchases were unplanned "impulse" buys?


Keep a list of prices of items commonly found on your grocery list. Take this list with you to the store so you can keep track of prices and not be taken in by in store "specials".

[1] Consumer and Corporate Affairs Canada, "Leader's Guide to Planning Your Food Dollar", Food Basics, 1979, p. 13.

MORE INGREDIENTS

CONTENTS OF SECTION V

1. Guide
2. Too Much Sugar
3. Dispatch - Additives Information
4. A Glossary of Common Food Additives and Their Uses
5. Salt and Your Health
6. Breakfast Cereal
7. Breakfast Cereals: The Real Sugar Bowl
8. Ways to Use Leftovers
9. Fast Foods Fact Sheet
10. If You Are What You Eat, Are You What You See on T.V.?

SECTION V
MORE INGREDIENTS
Guide

This section "More Ingredients" is just that. It provides you with more information you might find useful. The following fact sheets address a variety of topics related to food shopping. These topics include: food additives, sugar and salt content in our food, nutritious breakfast cereals, grades of foods, food advertising,ways to use leftovers and alternates to some fast foods. Hopefully they will provide you with some further information or ideas that will help you get value for your food dollar.

The Consumer Reports article "Too Much Sugar" provides some rather startling and interesting facts about the amount of sugar to be found in our everyday food.

"Dispatch - Food Additives" and a "Glossary of Common Food Additives and Their Uses" offer some basic information about food additives. This information includes a definition of additives, the reason for the use of food additives and a brief explanation of some of the more common additives found in our food.

"Salt and High Blood Pressure" discusses the relationship that exists between the high sodium content of some of our food and high blood pressure. As well, this report gives the sodium level per serving of some of the everyday foods we might find on our cupboard shelves.

"Test Of The Month - Cereals" discusses the most nutritious cereal found on the market while the fact sheet "Breakfast Cereals: The Real Sugar Bowl" lists the percentage of sugar found in some of our more common cereals.

"Ways To Use Leftovers" is a fact sheet suggesting a number of ingenious ways those often frustrating bits of leftovers in your refrigerator might be used.

"Fast Foods Fact Sheet" lists the calorie count of some fast foods and suggests some lower calorie alternatives.

To complete this section, the fact sheet "If You Are What You Eat, Are You What You See on T.V.?" offers some rather interesting information about food advertising.

The booklet, "Food Scorecard" has been included especially for the children in the family. This booklet has been designed to assist children in learning what foods are the most nutritious by having them score the nutritional value of the foods they and their families eat.

Too Much Sugar?

Which contains a greater percentage of sugar: *Heinz Tomato Ketchup* or *Sealtest Chocolate Ice Cream? Wishbone Russian Dressing* or *Coca Cola? Coffee-mate Non-Dairy Creamer* or a bar of *Hershey's Milk Chocolate?*

Unless you have a food-analysis laboratory in your basement, the answers might come as quite a surprise. The *Heinz Tomato Ketchup* is 29 percent sugar, compared to 21 percent for the ice cream. If you put *Wishbone Russian Dressing* on a salad, you're pouring 30 percent sugar, a proportion more than three times that of *Coke*. The *Coffee-mate*, which is supposed to be a substitute for cream, contains 65 percent sugar, against 51 percent for a *Hershey* bar.

Those were some of the results when CU analyzed 24 common food products to determine what proportion of their weight consisted of sugar. (When we use the word "sugar," we're referring to all varieties of sugars, including those in corn syrup, honey, fruit, and vegetables, as well as ordinary table sugar, or sucrose.)

When it comes to sugar, much of the food industry apparently operates on the assumption that the consumer has three taste preferences: sweet, sweeter, and sweetest. If you prepare your chicken with *Shake 'N Bake Barbecue Style*, you're getting a coating that's 51 percent sugar. A bowl of *Quaker 100% Natural Cereal* gives you 24 percent sugar. If you munch on a *Ritz Cracker*, you know you're not eating a cookie, but you might not know it's 12 percent sugar.

A look at product ingredients on supermarket shelves reveals the difficulty of finding almost any type of prepared food product without sugar in it. It's used not only in sweet baked goods, desserts, and soft drinks, but also in sauces, many baby foods, almost all fruit drinks, salad dressings, canned and dehydrated soups, pot pies, frozen TV dinners, bacon and other cured meats, some canned and frozen vegetables, most canned and frozen fruits, fruit yogurt, and breakfast cereals. If you eat a hot dog, there is likely to be sugar in the meat, in the ketchup or relish, and in the bun. There is even a bit of sugar in many brands of salt. And for Fido, there's sugar in *Gaines-burgers* dog food.

What is all this added sugar—an average of 128 pounds consumed by every man, woman, and child in the United States last year—doing to us? It depends on whom you listen to. The Sugar Association calls it "one of our cheapest sources of food energy" and "the catalyst that makes eating pleasurable." Kellogg Co., which makes various brands of presweetened cereal, says that sugar is "a solution to some world hunger problems."

But to critics, sugar represents "empty calories," accompanied by a host of medical ills. Sugar has been blamed not only for heart disease and diabetes, but also for a list of afflictions ranging from acne to varicose veins—not to mention obesity and tooth decay.

Where does the truth lie? In this article, we'll take a look at what sugar is, how it is used by the body, and what is known about its effects on health. We'll also answer some of the questions most frequently asked about sugar: How much is really necessary in a proper diet? Is brown sugar better for you than that white refined stuff? Is the natural sugar in fruit and honey somehow different?

FROM SUNLIGHT TO HOSTESS TWINKIES

Sugar is the most fundamental of all foods. In converting sunlight into food, green plants first make simple sugars. The starch in a potato comes from sugar formed in the leaves of the potato plant. Wood is built from sugar made in the tree's leaves. The oil in a peanut, the protein in wheat grains, and the perfume of a rose are all developed from sugar by the plant. Except for their mineral content, in fact, all components of a plant are derived from sugar.

Although the main sugars in fruits are usually fructose and glucose, many fruits and some vegetables also contain modest amounts of sucrose, which is chemically identical to the table sugar used in the home. Apples, apricots, beets, carrots, corn, peas, peaches, plums, and soybeans, for example, all contain from 3 to 7 percent sucrose. Virtually all the sucrose our early ancestors ate came from fruits and vegetables.

Sugar was cultivated as early as 325 B.C. in India, but it remained a scarce luxury until Columbus brought sugar cane to the Caribbean in 1493. Within the next hundred years, sugar became one of the valued products of the New World, often plundered by pirates along with silver and gold. Large-scale cultivation of sugar beets came much later, when the Napoleonic wars cut off shipments of Caribbean sugar to France. Napoleon then issued a decree in 1811 spurring a vast increase in French production of beet sugar.

In the chronicle of sugar, however, Columbus and Napoleon emerge as mere pikers alongside 20th-century food processors. Within the span of a few generations, the food industry has converted sugar from a household condiment to a ubiquitous component of the average person's diet.

Between 1900 and 1970, world production of sugar climbed from 8 million to 70 million tons. On average, Americans now get about 24 percent of their calories from sugar. Only 3 percent comes from the sugar in fruits and vegetables. Another 3 percent is from lactose, the milk sugar

in dairy products. The vast bulk—18 percent of all the calories we consume—is from sugar that is added to our food. Whether in packaged salad dressing or in *Hostess Twinkies*, sugar is the leading food additive in the United States today.

WHY WE'RE HOOKED ON SUGAR

Long before babies are exposed to Saturday morning candy and cereal commercials, they show an innate preference for sweets. The sweeter the solution, the more vigorously a newborn infant will suck—and the more the infant will consume. Even a five-month human fetus will increase its swallowing rate when saccharin is injected into the amniotic fluid of the mother.

Why do we have a seemingly inborn desire for sweets? A commonly held theory is that in primitive times sweetness served as nature's guide to what foods were safe to eat. Generally, the fruits and vegetables that tasted sweet were nutritious and healthful, while foods that tasted bitter were frequently poisonous. The process of natural selection might have produced an instinct for sweet taste, since the animals that preferred sweet things would have obtained the nutrients necessary for survival. This theory is substantiated by the fact that cats are among the animals that don't have a pronounced sweet tooth. Their ancestors never needed to develop one, since they hunted meat exclusively.

Whatever natural desire we have for sugar is quickly reinforced. The word "sweet" in our language stands for something good, something desirable. And for many young children, the attraction of sweetness is underscored by thousands of TV commercials extolling sweet-tasting foods.

Meanwhile, we now have far less control over the amount of sugar we eat than did previous generations. In 1930, 64 percent of the sucrose used in this country was purchased directly by consumers for home use, while only 30 percent went to industry. By 1970, those percentages were more than reversed, with just 24 percent being bought by consumers directly and 65 percent going to industry. (The rest went to restaurants, hotels, and government.) This means that much of the sucrose we eat has already been added before the food is brought home.

Some of the sugar in processed foods serves functions other than adding sweetness. It retains and absorbs moisture, which keeps foods from drying out rapidly. It depresses the freezing point, making ice cream and other frozen desserts smoother. It can act as a preservative, and it can enhance the appearance of some foods.

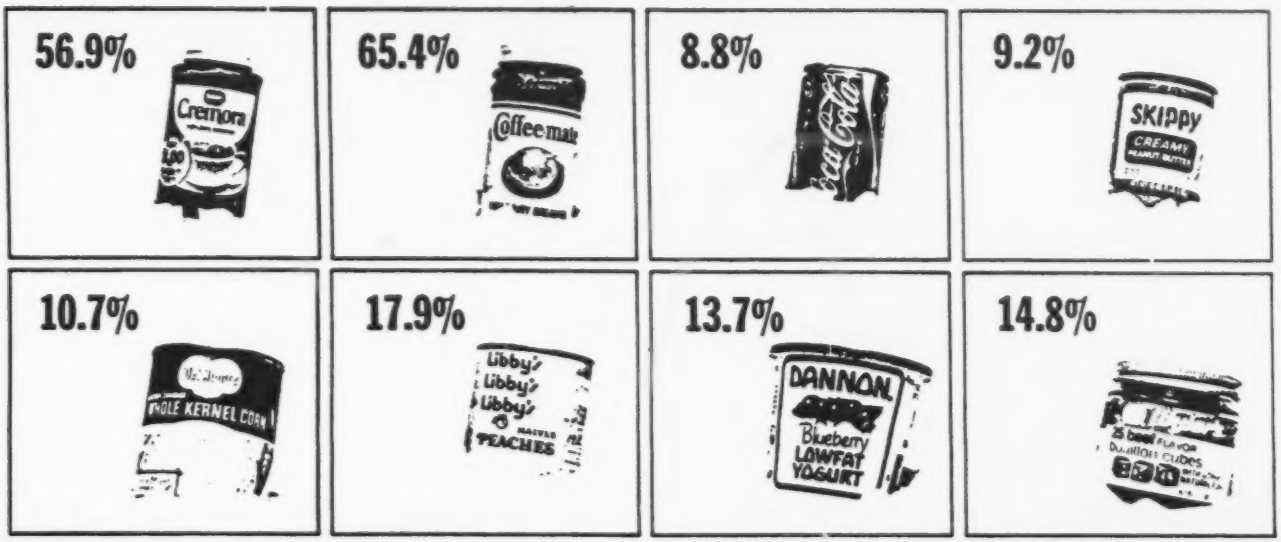
But much of the sugar used by industry seems to be related to two other factors: At around 10 cents a pound, sugar is much cheaper than many other ingredients. And many people like a sweet taste. The Senate Select Committee on Nutrition reported last year that "increased use of sugar is traceable in large part to the desire of food manufacturers to create unique food products with a competitive edge. Just recently, for example, Nabisco introduced an Oreo cookie with double the amount of sugar filling."

Food manufacturers insist that the percentage of sugar they use in foods results directly from the preference of consumer tasting panels. Yet they won't come out and say exactly what the total percentage is. You can look at the list of ingredients on the label, of course. But even then you frequently won't know where sugar ranks, because manufacturers can use different types of sweeteners and list each one separately.

Post Raisin Bran, for instance, lists sugar (sucrose) as its number three ingredient, corn syrup number five, and honey number seven. Together, those sugars might be the primary ingredient, but the purchaser won't know. As one father said in a recent television report on sugar: "What I didn't realize was that there's no place on the box that says there is 50 percent sugar or 55 percent sugar. So for most parents who only see a list of the vitamins stretched out, there's no way that they know that what they're feeding their children is candy, essentially."

The proliferation of sugar in food products is such that sometimes even company officials can't keep up. We asked a spokeswoman for Nabisco Inc. why *Ritz Crackers* had

HOW SWEET? HERE'S THE PERCENTAGE OF SUGAR CU FOUND IN 24 COMMON FOODS:



sugar in it. "There's sugar in Ritz Crackers?" she responded. After looking at the list of ingredients, she said the sugar was there for flavor, and that the difference between a *Ritz* cracker and a cookie was that "a cookie would have more sugar in it."

HOW MUCH SUGAR ARE WE EATING?

Defenders of sugar are quick to assert that sugar consumption in the United States has remained basically unchanged in the last 50 years—slightly under 100 pounds per person per year. That's true, but there's a catch. The figure is for sucrose only.

Food processors have increased their use of a second type of sugar in recent years. Derived from corn starches, it is variously called corn syrup, corn sugar, or corn sweetener. The per-capita consumption of corn syrup has jumped from 13 pounds in 1960 to an estimated 32 pounds last year. So per-capita sugar consumption—sucrose, corn syrup, and minor sweeteners like honey—has actually grown 14 percent since 1960, from 112 to 128 pounds. That's more than one-third of a pound of sugar a day for each person.

What happens to all this sugar in the body? Basically, it is digested and used like any other carbohydrate. Nearly all carbohydrates are ultimately converted into glucose, the primary fuel of the body. Glucose, or "blood sugar," is delivered by the bloodstream to the liver, where it is converted and stored as glycogen until needed by the body. With the help of the hormone insulin, blood glucose then enters nearly all cells of the body and is used as an energy source. The glucose that isn't needed by the cells is metabolized in the liver into fatty substances called triglycerides, which are transported in the bloodstream to the fat depots of the body. The body can later draw upon those stores of fat if it needs energy during fasting or dieting.

Why, then, in view of the body's basic need for energy, is there anything wrong with eating sugar? The problem is that sugar, unlike most other sources of carbohydrate, contains no nutrients except calories. It's a classic constituent of "junk food"—generally, a processed food that's relatively high in calories, lacks any significant amounts of protein, vitamins, or minerals, and contains comparatively large quantities of fats or sugar. Essentially, there's absolutely no dietary requirement for sugar that can't be satisfied by other, more nutritious foods, such as fruits and vegetables.

There isn't even a need for sugar for so-called quick energy, to fuel a morning of tennis, skiing, or the like. Unless you fast for more than a day or two, your body has sizable reserves of liver glycogen to call upon. If you eat sugar before exercising, the sugar will quickly be metabolized and move into storage with your other fuel reserves.

If you get 20 percent of your calorie requirement from sugar, you have to rely on the other 80 percent of your diet to supply the other nutrients you need—no dietary feat for most people, but a neat trick for anyone trying to lose weight.

Moreover, while the amount of sugar we eat increases, the average per-capita consumption of flours and grains has dropped by more than half over the course of this century. Therefore we're getting more and more of our carbohydrates from sugar—the carbohydrate supplying the fewest nutrients.

In a recent report, the Senate Select Committee on Nutrition called for a 45 percent reduction in sugar consumption. We see little sense in picking an arbitrary percentage, but many people would do well to pay attention to the amount of sugar they're consuming. A lot of sugar certainly does you no good nutritionally, and it may contribute to certain health problems. Exactly which ones, however, has often been obscured by emotional debate.

SUGAR AND HEALTH

Here is what is known about sugar's relationship to some common health problems:

Tooth decay. The link between dental caries (cavities) and sugar is no longer a matter of controversy. There is now overwhelming evidence from animal experiments and human studies to implicate sugar in tooth decay.

Sugar serves as food for the bacteria normally present in the mouth. One of the byproducts of bacterial activity on sugar is glucan, a thick, gel-like substance that sticks tenaciously to the tooth surface and hastens the buildup of bacterial plaque. Another byproduct is a group of acids, includ-

103

ing lactic, formic, and acetic acid. Held against the tooth surface by the plaque, the acids attack the tooth with a success that depends on the protective quality of the saliva and the tooth's vulnerability to decay.

There is not, however, a simple, direct relationship between the amount of sugar consumed and the number of cavities you'll get. In addition to your individual predisposition to cavities, a key factor is how much sugar gets stuck to your teeth, and for how long. Sticky candy, for instance, can do far more damage to teeth than a soft drink, because the sugar in liquids is more easily washed away. Note, though, that frequency of exposure also plays a role. Several soft drinks a day might do more damage than one piece of toffee a week. Moreover, the acid content of many soft drinks, such as cola beverages, can also contribute to erosions, a chemical wearing away of the teeth at the gumline.

Tests on humans have shown that sugar eaten as part of a meal causes less damage to teeth than the same amount of sugar consumed as a between-meals snack. This is probably because the other foods and liquids consumed during a meal help remove the sugar from tooth surfaces.

The bacteria in your mouth don't care whether the sugar has been put there by nature or by industry. You can damage a baby's teeth by putting fruit juices, or even milk, in a bottle at bedtime and allowing the baby to fall asleep while sucking. That lengthens the time the sugar in the drink is in contact with the baby's teeth.

Obesity. America as a nation is growing fatter. About one-third of the adult population is overweight—more than 10 percent above the normal weight for height. The National Center for Health Statistics recently released results of a weight study of 13,600 people checked from 1971 to 1974. Women under age 45 weighed 4.7 pounds more on average than women of equivalent height checked in a 1960 to 1962 study. Men under age 45 were 3.8 pounds heavier than their counterparts of a decade earlier, and those older than 45 were 4.8 pounds heavier.

Obesity is usually bad for a person's health. It increases the possibility that such disorders as heart disease, high blood pressure, diabetes, gallstones, varicose veins, back problems, and arthritis might develop or become more severe.

It's not sugar itself that makes you fat, of course. It's the total amount of calories you consume in excess of what you need. Sugar, like all other carbohydrates, contains four calories per gram, or 113 per ounce. But sugar-sweetened foods also tend to be those in which calories are highly concentrated, such as in pies, cakes, candy, and the like. And there's also the palatability factor: The presence of sugar in a food may tempt you to eat more of it.

If you're trying to lose weight, moreover, reducing your calorie intake without cutting sugar consumption means you probably won't get all the nutrients your body needs.

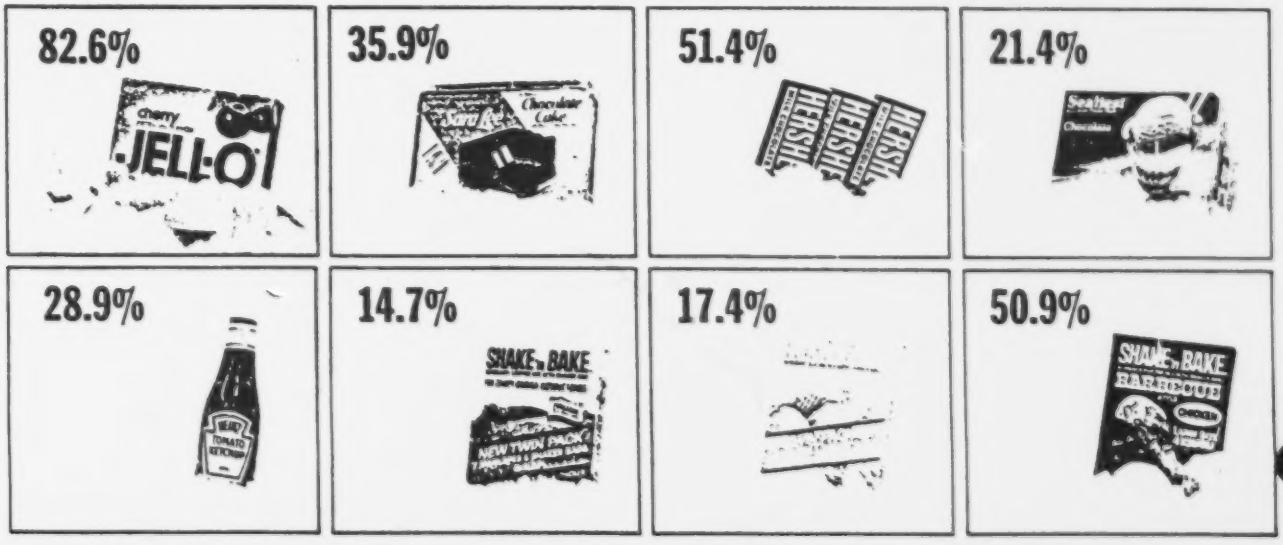
Diabetes. Since diabetics frequently have to reduce their sugar consumption dramatically, many people have come to think of diabetes as a disease caused by excess sugar. Actually, the causes are much more complex than that; and the role of sugar in the onset of diabetes still isn't clear—if, in fact, it plays any role at all.

Although diabetes has been known since antiquity, its cause or causes remain unknown. Genetic predisposition seems to play an important role. Medical studies have not been able to prove that sugar intake *per se* can cause diabetes. There might, however, be an indirect effect. Excessive consumption of sweets can contribute to obesity, and obese people have been shown to be more resistant than lean people to the action of their body's own insulin, the hormone that helps the body "burn" glucose. This factor may contribute to the development of the disease in overweight, middle-aged persons.

Heart disease. Most experts in the field see little support for the theory that sugar consumption contributes to heart disease. As one sums it up: "I would personally say the matter of sugar and heart disease is the least demonstrable problem with sugar."

There are some people, however, who have a tendency to develop high levels of serum triglycerides (a factor that may contribute to heart disease) from carbohydrate foods. And sugar, of course, is a carbohydrate. Since many of these people are obese, the total calories in their diet may be con-

Continued on page 142



sidered as important as their carbohydrate intake. Hence, weight reduction as well as carbohydrate restriction helps to reduce triglyceride levels in those patients.

Basically, if you are in good health and not overweight, the amount of sugar in your diet needn't worry you so far as heart disease is concerned. If you are overweight, it's advisable to lose weight by lowering your customary intake of both fats and sugars. In that way, you may reduce your risk of developing cardiovascular problems as well as other disorders associated with obesity.

Apart from sugar's role in tooth decay and its potential contribution to obesity, there is little evidence to convict sugar of the catalog of health crimes it is accused of. Allegations linking sugar to various disorders often change with the times. Acne was once thought to be caused by eating sweets—particularly chocolate. But medical studies failed to demonstrate any association. More recently, sugar has purportedly been linked to such ills as hyperactivity in children, hypoglycemia, and others. But again, the allegations are either unproven or anecdotal.

Nevertheless, sugar's contribution to tooth decay and obesity is reason enough to approach sweets as an occasional treat rather than as a steady diet. And to that end, it would be helpful if food manufacturers were required to tell consumers clearly just how much sugar is really in their products. You should know that spreading two tablespoons of ketchup on a hamburger means you're about to consume more than a teaspoon of sugar.

ARE ALL SUGARS THE SAME?

If you read labels carefully in a "health-food" store, you would no doubt conclude that white refined sugar is rated on a par with DDT and arsenic. But that doesn't mean you won't find sugar in "health-food" products. So-called health breads, for instance, are often chock full of honey, molasses, brown sugar, or "raw" sugar. It's just white refined sugar that's considered to be the villain.

Is there any truth to the notion that one sugar is somehow better for you than another? Some sugars aren't quite as bad for your teeth as sucrose. Otherwise, there's virtually no difference among them worth worrying about. To understand why, it's necessary to look at how the most common commercial types of sugar differ.

There are more than 100 sweet substances identified as sugars. These include fructose (fruit sugar), dextrose (one of the sugars made from corn starch and chemically identical to glucose), lactose (the sugar in milk), and maltose (malt sugar, formed from starch by the action of yeast). But the word "sugar" is commonly used to refer to sucrose, which comes from sugar cane or sugar beets. In a typical manufacturing operation, the sugar cane is shredded into small pieces, crushed, and the juice separated. Processing causes the sugar in the juice to crystallize, forming sugar crystals and syrup. These are separated by a mechanical device into the end products, raw sugar and molasses. Then comes a washing and filtering, and the raw sugar is eventually turned into refined white sugar.

Raw sugar is banned in the United States, for good reasons: It contains such contaminants as insect parts, soil, molds, bacteria, lint, and waxes. When it's partially refined to make it sanitary, it can be sold as "turbinado" sugar. Brown sugar consists of the sugar crystals coated with some molasses syrup. Most refiners make it by spraying syrup onto refined white sugar.

Brown and turbinado sugar might look more healthful because of their dark color and distinctive odor. But the few additional nutrients they contain are so minuscule in quantity that for all practical purposes they're worthless. The nutrients simply aren't there in the usable parts of the sugar cane or sugar beet plant to be refined out.

Honey is formed by an enzyme from nectar gathered by bees. Depending on where the nectar comes from, honey can differ in composition and flavor. But all honey is a blend of a number of different sugars, largely fructose and glucose. Like brown sugar, honey has a few nutrients—mainly potassium, calcium, and phosphorus. But, again, they're scant. You'd have to eat 91 tablespoons of honey each day to get your recommended daily requirement of potassium, 200 for calcium, and 267 for phosphorus. There's no evidence that honey is easier to digest than other sugars. When you eat table sugar, your body breaks the sucrose down into fructose and glucose, the two leading ingredients of honey.

What about substituting honey for sucrose in cooking or in your coffee to get more sweetening power per calorie? It is true that some batches of honey can be as much as 40 percent sweeter than sugar (although other batches can actually be less sweet). A cup of honey has only 23 percent more calories than a cup of sugar. So with a little luck, you do get more sweetening power per calorie. But substituting honey will change the character of the food you're preparing, meaning you might have to alter the cooking time or some other aspect of the recipe.

Remember, finally, that sucrose is a "natural" substance; it comes from a plant. In the same way, nature has put sugar in other fruits and vegetables. Just because a bottle of apple juice says "unsweetened" or "no sugar added," it doesn't mean that sugar wasn't there in the first place. The natural sugars in orange, apple, and many other fruit juices make them slightly higher in total sugar than a bottle of *Coca Cola*. But there are two important differences: The fruit juices give you other nutrients besides calories, and one of their principal sugars (fructose) is somewhat easier on tooth surfaces than sucrose.

Accordingly, if you're concerned about nutrition or your teeth, try to satisfy your craving for sweets with fresh fruits and fruit juices. Brown sugar, turbinado sugar, and the like offer no health advantage over the undisguised white stuff.

Meanwhile, even if you want to substitute nutritious foods for that one-third of a pound, or 600 calories, of sugar the average American eats daily, you may still find yourself thwarted by the lack of information on product labels. Manufacturers can use several different sugars to avoid putting the word "sugar" at the head of their ingredients list. Until a government agency acts to require a clear revelation of sugar percentage in processed foods, all you can do is to check the label to see which sugars have been added. As a key, look for any word ending in "ose," such as maltose or dextrose. "Corn syrup" or "corn sugar" is a commonly used sucrose substitute. Ultimately, they all mean the same thing: You're buying sugar.

Health and Welfare Canada
Santé et Bien-être social Canada

NO 30 (Revised)
DATE Summer 1977

FOOD ADDITIVES

Modern technology enables us to gather fresh foods and ingredients from all over the world; modern food processing ensures an abundant food supply throughout the year. The use of food additives has kept pace with technological advances in food processing and improved systems of transportation. But as the use of additives has grown, so has concern about the necessity and safety of adding so many non-food substances to our foods.

WHAT IS A FOOD ADDITIVE?

Generally, a food additive is thought to be any substance added to a food in the course of production, processing, packaging or storing. The legal definition, however, is more specific. The Canadian Food and Drug Regulations define a food additive as "any substance, including any source of radiation, the use of which results, or may reasonably be expected to result in it or its by-products becoming a part of or affecting the characteristics of a food".

Nutritive materials such as salt, sugar and starch are not considered to be food additives, because each of them is "used, recognized or commonly sold as an article or ingredient of food". Certain other ingredients are excluded from the definition because they are covered separately in the Food and Drug Regulations. These ingredients include vitamins, mineral nutrients, amino acids, spices, seasonings, flavouring preparations, agricultural chemicals, food packaging materials and veterinary drugs.

Food additives may be natural in origin, such as lecithin from soybeans; or synthetically produced, such as calcium propionate. Whatever their origin, additives are chemicals, and this fact disturbs some consumers. However, it is not a cause for alarm, since all foods, indeed all things including man, may be viewed as composed of chemicals. In fact, chemical additives include many common kitchen ingredients such as vinegar (acetic acid), baking soda (sodium bicarbonate) and meat tenderizer (papain).

WHY DO WE USE FOOD ADDITIVES?

Food additives are used in the manufacture of food for a variety of technological reasons. In Canada, their use is considered to be justified only if such use is in the interest of the consumer and when the additives serve one or more of the following purposes:

a) Maintaining the nutritional quality of a food;

For example, the addition of an antioxidant such as BHA (butylated hydroxyanisole) to a Vitamin A preparation enhances the stability of the

Educational Services, Health Protection Branch

SOME COMMON FOOD ADDITIVES

CLASS	FUNCTION	SOME EXAMPLES OF SPECIFIC ADDITIVES	FOODS IN WHICH THESE ADDITIVES ARE USED
ANTICAKING AGENTS	keep powders free-running	magnesium carbonate	icing sugar
BLEACHING AND MATURING AGENTS	hasten the natural process of whitening and maturing of wheat flour	chlorine	flour
CARRIER OR EXTRACTION SOLVENTS	used to dissolve flavours, colours and spices	ethyl alcohol	vanilla extract
COLOURS (natural and synthetic)	give food an appetizing appearance	carotene	butter, cheese
FOAMING OR WHIPPING AGENTS	enable pressure-packed products to be dispensed in a whipped state	nitrogen	dessert toppings
FIRMING AND CRISPING AGENTS	maintain the texture of fruits and vegetables	calcium chloride	canned vegetables
FOOD ENZYMES	act as catalysts to initiate desired chemical reactions	rennet	curdling milk in the making of cheese
HUMECTANTS	maintain desired moisture levels	sorbitol	shredded coconut, marshmallows
pH-ADJUSTING AGENTS (acids, alkalis and buffering agents)	control the acidity or alkalinity (pH) of foods; modify flavour slightly	sodium bicarbonate	baking powder
PRESERVATIVES -antimicrobial agents	inhibit the growth of moulds, yeasts or bacteria	sodium diacetate	bread
-antioxidants	prevent rancidity and oxidative discoloration	butylated hydroxytoluene (BHT)	cooking oils
RELEASE AGENTS	help food separate from surfaces it touches during manufacturing or transport	mineral oil	baked goods (to remove from baking pans without sticking or crumbling)
TEXTURE MODIFYING AGENTS (emulsifiers, gelling agents, stabilizers and thickeners)	impart and maintain a desired consistency in foods	mono and diglycerides	ice cream

preparation prior to its addition to foods.

b) Enhancing the keeping quality or stability with resulting reduction in food wastage;

Preservatives play a major role in extending the natural "life" of many foods (canned meats, baked goods, jams, jellies, etc.,) so that they may be transported over vast distances, stored for considerable lengths of time and still be consumed safely. The World Health Organization (WHO) estimates that 20% of the world's food supply is lost through spoilage. Without preservatives, this percentage would be much higher.

c) Making foods attractive to the consumer in a manner which does not lead to deception;

Food additives such as colours and texture agents are used in Canada to correct natural variations in foods so that a particular food looks, tastes, and performs the same way every time. The use of additives also makes possible a large variety of attractive convenience foods (snack foods, one-pan-dinners, frozen desserts, etc.).

d) Providing essential aids in food processing;

Some food manufacturing processes require the use of processing materials such as stabilizing, clarifying and oxidizing agents. The use of these substances permits the economical large-scale manufacture of foods of constant composition and quality throughout the year.

When a manufacturer chooses to use a food additive, he must choose from those listed in the Food Additive Tables in the Food and Drug Regulations which classify additives according to function. The Tables list the additive, the foods in or upon which it is permitted, its purpose in those foods, and the maximum level of use.

WHAT ARE SOME COMMON TYPES OF FOOD ADDITIVES?

The table on page 2 describes the functions of some common classes of food additives, and gives specific examples.

WHO CONTROLS FOOD ADDITIVES?

The control of food additives in Canada is a responsibility of the Health Protection Branch. The Branch's food inspectors regularly examine food manufacturing plants to ensure that the manufacturer is abiding by the provisions laid down in the Food Additive Tables. A manufacturer may be prosecuted if he uses additives in amounts violating the Regulations, or additives which have not been added to the permitted list.

When a manufacturer wishes to introduce a new additive, he must submit an application to the Health Protection Branch. Among other information, this submission must include reports of controlled studies which indicate that the additive will be safe for human consumption at proposed levels of use. These studies normally include animal studies to determine the dosage level of the additive which will have no discernible effect (i.e., the "no effect level") in the most sensitive species of animals tested.

ADDITIVE SAFETY

The concept of Acceptable Daily Intake (ADI) is used to provide a quantitative expression of safe amounts of intentional food additives for the guidance of regulatory agencies. The ADI is the daily dosage of a chemical which may be consumed by humans for a lifetime without discernible risk, on the basis of all the facts known at the time. This is generally derived by dividing the "no effect level", obtained from animal studies, by 100. The 100-fold safety factor is based on the premise that man may be more sensitive to the additive than other animals, and that certain individuals may be more sensitive than the norm.

Additives are also being continually reviewed by the Health Protection Branch. If new data provide evidence that the use of a particular additive poses a hazard to the consumer, recommendation is made to have it removed from the Food Additive Tables. Guinea green, diethyl pyrocarbonate, and saccharin are examples of food additives which have been deleted in recent years.

Meanwhile, there has been considerable criticism of the use of food additives, both in Canada and internationally. But without additives, many food products could not be offered for sale in their present forms, and the remaining products would be much more expensive. The use of additives has made possible much of the variety and convenience found in our food supply. Moreover, if food production is to keep pace with population growth and the effort to improve general nutrition in undernourished areas, the use of food additives will become increasingly important.

REFERENCES

CANADIAN FOOD AND DRUG REGULATIONS, Part B, Division 16

Educational Services, Food Additives Health Protection and Food Laws, 1977.

HPB Control Over the Safety and Use of Food Additives, Rx Bulletin, June 1973.

Reports of the Joint FAO/WHO Expert Committee on Food Additives: First Report, General Principles Governing the Use of Food Additives, FAO Nutrition Meetings Report Series, NO. 15, 1957; WHO Technical Report Series, NO. 129, 1957. Subsequent Reports on the Evaluation of Food Additives, FAO Nutrition Meetings Report Series, 1958-1976; WHO Technical Report Series, 1958-1976.

Kermode, G.O., "Food Additives", Scientific American, March 1972.

DISPATCH IS AVAILABLE IN BOTH OFFICIAL LANGUAGES

A Glossary of Common Food Additives and Their Uses

AGAR: A seaweed extract, this is a gel-like substance used mainly to prevent cake frosting from drying out.

BROMINATED VEGETABLE OIL - BVO: An oil mixed with bromine which helps the flavoring to stay mixed in the water without rising to the top. It also makes liquid look cloudy, for an illusory appearance of "body".

BHA/BHT - BUTYLATED HYDROXYANISOLE, BUTYLATED HYDROXYTOLUENE: These preservatives improve shelf life for short periods of time. They are usually found in foods, such as potato chips, that may sit on the shelf for a period of time. Scientists have shown that they accumulate to some extent in our body fat.

CALCIUM AND SODIUM PROPIONATE: These are expedient preservers that stop mold and some germs from growing in baked goods.

CARRAGEENAN: A gel derived from seaweed, it helps disperse cocoa in chocolate milk and desserts. There is evidence, however, that suggests it should not be fed to infants.

CITRIC ACID: Found naturally in citrus fruits and berries, it is used as a flavoring in candy, gum, and soda and as a preservative in many foods.

DIOCTYL SODIUM SULFOSUCCINATE - DDS: This sounds bad but isn't; it's used in powdered beverages (Kool Aid, etc.) to help the powder dissolve in water.

GUM ARABIC: The sappy gum from the acacia tree is used in candy, drinks, ice creams and puddings. It is used as thickener and stabilizer in these products.

GUAR GUM: Naturally found in plants, this is a thickener of ice creams, puddings and beverages.

INVERTASE: This is the yeast enzyme capable of inverting sucrose. A doctoring agent.

LECITHIN, SOYA LECITHIN: A soybean derivative, this healthful additive is used as an emulsifier in chocolate, ice cream, baked goods, and margarine. Added to chocolate, lecithin reduces the expensive cocoa butter content from 36 percent to 32 percent.

MANNITOL: Ever notice the "dust" on a stick of chewing gum? It could be sugar, but more likely it is this sweetener - also a major substitute for sugar in "sugarless" gums. Because it isn't absorbed into our bodies easily, doctors have been known to use it sometimes as a laxative.

MONO- AND DIGLYCERIDES: These make cakes fluffier, prevent overstickiness in caramel, stop breads from getting stale quickly. They are derived from natural sources.

POLYSORBATE 60: This helps oil to stay dispersed in water. As an emulsifier, it is often found in baked goods, fake whipped cream and snacks. Polysorbates have been found safe repeatedly and are even used as an aid for people who have illnesses that prevent easy absorption of fat into the bloodstream.

PROPYL GALLATE: Used in snack foods, chewing gum, candy and other junk, it keeps fats from oxidizing and turning rancid.

PROPYLENE GLYCOL: This is found in candy, baked goods, frostings, coconut shreds and soft drinks. It keeps food moist and maintains the proper texture.

SODIUM BENZOATE OR BENZOATE OF SODA: For nearly this entire century, this preservate has been found in soda, fruit juices, and other foods (such as maraschino cherries). Remarkably concentrated, it is used in proportions of less than one-tenth of one percent to keep foods fresh.

SORBIC ACID: Found in soft drinks, canned frostings, syrups, and baked goods, this preservative and inhibitor of mold and fungus is used by the body as if it were a real fat.

SORBITAN MONOSTEARATE: This emulsifier is often found in chocolate candy as well as cakes and frostings, frozen puddings, and other foods. It also prevents the discoloration that occurs due to fats moving to the surface and hardening when chocolate is warmed and later cooled.

SORBITOL: This synthetic sweetener is used in sugarless gums, but turns into a sugar once in the body. It is also used to maintain firmness in chewable sweets. It acts as a laxative in larger amounts (one ounce for children and double that for adults).

TARTARIC ACID: This comes from grapes and is used in grape-flavored junk food.

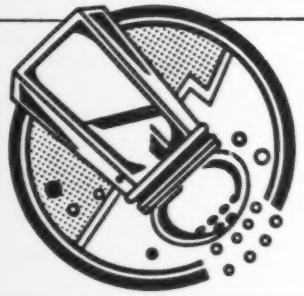
TRAGACANTH GUM: A thickening agent, it is used mostly in acidic foods.

Sources:

Health and Welfare Canada, Encyclopedia of Food Chemicals, (1980)

Michael S. Lasky, The Complete Junk Food Book. (New York: McGraw-Hill, 1977).

Salt and your health



Is salt—or the sodium it contains—really a villain? How does it affect you? With high levels of sodium in many foods you eat—and even in some medicines you take—are there sensible ways to cut down? In this two-part report, CU explores the connection between salt and high blood pressure and suggests ways to cut down.

Salt and high blood pressure

Salt is no stranger to controversy, as audiences at the movie *Gandhi* were recently reminded. The Indian leader's famous march to the sea to make salt, in defiance of the British salt monopoly, marked a turning point in the history of India.

While making salt is no longer an act of political defiance, eating it—especially in liberal amounts—is coming to be perceived as an act of medical defiance. And the underlying issue, which involves the suspected role of salt in promoting high blood pressure, is again well-seasoned with controversy.

Salt is relevant to health because of its sodium content. Sodium plays a major role in the regulation of body fluids and is commonly assumed by scientists to have an influence on blood pressure. Salt, or sodium chloride, is about 40 percent sodium and is the main source of sodium in the American diet. Other typical sources include various food additives, such as monosodium glutamate (MSG), sodium phosphate, and sodium nitrite. Sodium also occurs naturally in many foods.

Everyone needs some sodium in the diet to replace routine losses. About 200 milligrams a day is considered essential for survival; individual requirements vary with physical activity, climate, and other factors. The Food and Nutrition Board of the National Academy of Sciences/National Research Council estimates that an "adequate and safe" intake of sodium for healthy adults is 1100 to 3300 milligrams a day, the equivalent of approximately ½ to 1½ teaspoons of salt.

Americans generally consume at least twice that amount, however. Estimated intakes of individuals range from 2300 to 6900 milligrams of sodium daily, according to the Food and Nutrition Board.

Most people appear to suffer no ill effects from a high salt intake. But a significant minority—the roughly 20 percent of American adults who develop high blood pressure—can be affected by excessive amounts of sodium in their diets. Their sodium intake influences their blood-pressure levels, and some researchers believe it may contribute to the development or onset of the disease.

High blood pressure, or hypertension, is a persistent elevation of blood pressure above normal levels. (The term "tension," here, means pressure, not nervous tension; both tense and seemingly relaxed people can be susceptible to it). If the disease is not detected and treated, it can eventually lead to stroke, heart attack, or kidney failure. For purposes of prognosis and treatment, hypertension is commonly defined as mild, moderate, or severe.

Until recently, advice to cut back on sodium was directed primarily to people with hypertension or to those considered at risk of developing it. The latest recommendations, however, are aimed at the American public in general. Dietary guidelines issued jointly by the U.S. Department of Agriculture and the Department of Health and Human Services now advocate that all Americans "moderate" their sodium intake. Several health or science groups, such as the American Heart Association, the American Medical Association, and the National Heart, Lung and Blood Institute, offer similar advice. The recommended sodium intake varies or is sometimes left unstated, but all those groups agree the intake should go down.

A mixed reaction

Despite such official blessings, the idea of a sodium cutback for the public at large has not drawn universal applause. Among experts on hypertension, reaction to the Federal guidelines ranges from enthusiastic support to heated criticism. While some view the advice as reasonable and practical, others argue that it's unwarranted and lacks adequate scientific justification.

At the crux of the debate is a question

255 mg. per ½-cup serving

105 mg. per 2-tsp. dose

200 mg. per 1-oz. serving

common to many public-health policies: Is it reasonable to prescribe something for an entire population to protect a vulnerable minority—in this case, the people susceptible to hypertension? The issue in this instance arouses further controversy because there is no proof that excess sodium actually *causes* hypertension or that lowering sodium intake will prevent the disease. By contrast, a public-health measure such as childhood vaccination is widely accepted because it's known to be effective in preventing specific illnesses.

Long-term studies may resolve the sodium issue, but not in the near future. Accordingly, many people will have to decide whether cutting back on sodium makes good sense for themselves. In making an individual decision, it's important to understand what hypertension is, what role sodium might play, and whether you are in one of the "risk" groups that experience a higher incidence of the disease.

Anatomy of hypertension

The body regulates blood pressure through a complex system. The system works by means of nerve signals, hormones, and other influences to widen or narrow the arterioles—small, muscular blood vessels that carry oxygen and nutrients from the arteries to the tissues.

If a part of the body needs a lot of nourishment at a particular time (the stomach during digestion, for example), nearby arterioles expand to allow increased blood flow. Arterioles in other parts of the body constrict to maintain normal blood pressure.

In some people, the regulatory system goes awry. Arterioles all over the body constrict at the same time and stay constricted. Pressure in the larger arteries goes up and stays up. The result is a sustained abnormal rise in blood pressure.

In about 10 percent of hypertensive patients, the faulty regulatory effect is traceable to kidney disease, to localized narrowing of the arteries leading to the kidneys, or to a tumor or overactivity of the adrenal glands. Some of those problems may be corrected by surgery or by specific medications, after which blood pressure usually returns to normal. In most cases, however, the cause of the regulatory breakdown is obscure. Hypertension of unknown cause is called *essential* hypertension.

A prime suspect

Some researchers believe that the unknown cause is high salt consumption. As evidence, they point to studies of salt intake in animals and humans.

In the early 1960's, Lewis K. Dahl of Brookhaven National Laboratory discovered that a high-salt intake caused elevated blood pressure in about three-quarters of the laboratory rats he fed salted feed. The rest weren't affected. Through breeding, Dahl then produced two distinct strains of rats: a "sensitive" strain that developed severe high blood pressure from salted feed, and a resistant strain that ate the same amount of salt but maintained normal pressures. He concluded that the adverse response to salt was inherited. Dahl also made another observation: The blood pressures of the genetically susceptible rats remained normal on a diet very low in salt.

Many hypertension authorities believe that people react to salt in much the same way as Dahl's rats. Some are resistant to hypertension and never develop the disease even though they eat large amounts of salt all their lives. Others appear to inherit a susceptibility to high blood pressure, and a high-salt diet seems to promote occurrence of the disease. If this theory is correct, susceptible people may be able to avoid hypertension by using salt sparingly throughout life.

For obvious reasons, clinical studies comparable to those performed on rats have never been done with people. So, direct evidence as to whether a high-salt intake can cause hypertension in humans (or whether a low-salt diet can prevent it) doesn't exist. Some indirect evidence is available, however. It comes mainly from studies of different populations that eat varying amounts of salt.

Some isolated tribes, such as the Kung Bushmen of the Kalahari Desert and the Yanomamo Indians of Brazil, consume diets extremely low in salt, generally less than 500 milligrams a day. Studies of such tribes have found that the members experience virtually no hypertension and that their blood pressures do not rise with age, as do those of people in industrialized societies.

In contrast, farmers in northern Japan, who preserve food with salt, consume as much as 30 grams of salt daily (about six teaspoons). Approximately 40 percent of them have high blood pressure, and the most common cause of death is stroke.

Similar studies have been carried out on more than 20 cultures, ranging from Greenland Eskimos to natives of the Solomon Islands in the South Pacific. Taken together, the studies show that hypertension is rare in populations that use very little salt. Conversely, in societies where a lot of salt is consumed, a significant minority of the people develop the disease.

Complicating factors

Such studies suggest that salt intake is related to essential hypertension in humans, but they don't prove that it is. Skeptics point out that the cultures that do not experience hypertension are all primitive or nonindustrial people whose salt intake isn't the only thing that sets them apart from Americans. They are much leaner and more physically active than Americans, their diets differ in other ways, and they are free from various stresses of modern industrial life. Perhaps these factors, and not just a low-salt intake, would help to explain the lack of high blood pressure in such societies.

Meanwhile, the exact way that sodium influences blood pressure is still not firmly established. One view is that it affects blood-pressure levels through its ability to promote water retention and expand the body's fluid volume. This in turn produces increased pressure within the arteries. Another theory, which may or may not involve sodium, is that a generalized decrease in the diameter of the smaller blood vessels causes a resistance to blood flow that affects blood pressure.

Whether or not those theories are correct, virtually all authorities agree that low-sodium diets can reduce blood pressure in many patients with mild hypertension. What has not yet been established, however, is that a moderate cutback in sodium can *prevent* hypertension in susceptible people.

For the majority of Americans, moreover, there's currently no evidence that

70 mg. per 2-tab dose

365 mg. per 1-oz. serving

1025 mg. per 3-oz. serving

the level of their salt intake makes any difference as far as hypertension is concerned. In a recently published study, for example, researchers at Yale University School of Medicine examined the effect of salt intake on blood pressure among 3566 Connecticut residents who had never been diagnosed as hypertensive. All of the subjects were interviewed about their dietary salt intake and had their blood pressure recorded.

After developing an approximate "index" of salt intake, the scientists compared the mean blood pressure of those in the top 10 percent of the salt-consumption index with the mean of those in the bottom 10 percent. The difference in average blood pressure between the heaviest and the lightest salt users was insignificant.

"These findings indicate that it is unlikely [that] dietary salt intake has a clinically significant effect on blood pressure in the majority of individuals in a large defined population," the researchers reported in the Journal of the American Medical Association. They also noted, however, that their findings would not rule out the possibility of a clinically significant effect for a minority of "salt-sensitive individuals."

An elusive majority

Despite evidence that as many as four out of five Americans probably needn't worry about their salt intake, a practical problem remains. Although many people will never develop hypertension even if they eat relatively large amounts of salt all their lives, there's no way to tell in advance who they are. Nor is there any reliable means of predicting which individuals will be susceptible to high blood pressure. There are, however, certain risk factors that offer clues to which people are more likely than others to become hypertensive.

- **A family history** of hypertension is one warning signal. If either of your parents or a brother or sister has (or had) hypertension, you're about twice as likely to develop it as someone without such a history.
- **Race** is another factor. Black people are twice as likely as whites to develop hypertension. In blacks, the disease develops earlier in life, is often more severe, and is more likely to be fatal at a younger age than in whites. The hypertension rate for blacks aged 25 to 34, for example, is about 19 percent, compared to about 8 percent for whites. And death rates from hypertension and hypertensive heart disease before age 50 are at least six times higher among blacks.
- **Obesity** can also influence blood pressure. About 30 percent of adult Americans are overweight. Studies show a higher prevalence of hypertension in overweight people than in lean people.

Among overweight people who develop hypertension, weight loss is frequently one of the most effective ways to reduce blood pressure, often to normal levels. So, counting calories may be just as important for an overweight person as watching salt intake.

- **Age** is another factor, for whites as well as blacks. In western societies, blood pressure rises with age, and nearly half of all Americans who live to age 74 develop hypertension. Consequently, moderating salt intake may be a worthwhile precaution for the elderly.

Low-salt diets as therapy

Doctors have known about the effect of low-salt diets since the 1940's, when drastic reductions of sodium intake were first used to treat severe cases of high blood pressure. Few patients could tolerate the monotonous fare, however, which had to be restricted to a few selections, such as rice, fruit, and sugar.

Such narrowly limited diets were largely abandoned in 1957, when thiazide diuretics were introduced for treating hypertension. Those drugs produced the same overall effect as sodium-restricted diets. By ridding the body of excess salt and water, they reduced the body's fluid volume and lowered blood pressure. Since 1957, other drugs have been developed to combat hypertension. Some reduced blood pressure by directly relaxing certain blood vessels and decreasing resistance to blood flow. Others blocked nerve impulses that indirectly raise blood pressure. Although hypertensive patients were still encouraged to "go easy on the salt," dietary treatment was largely replaced by the new drugs.

More recently, however, the low-sodium diet has attracted renewed interest, for a variety of reasons. Antihypertensive drugs can cause unpleasant side effects, leading some patients to stop the medication. Also, patients must take the drugs for the rest of their lives, and possible long-term side effects are an added concern.

Prescribing drugs to treat mild or "borderline" hypertension is still controversial. There's little doubt that even mild hypertension increases a person's risk of developing serious complications. Yet a number of hypertension experts question whether the "costs" of drug treatment for mild hypertension—side effects, medical expense, and possible long-term hazards—are worth the presumed benefits. Evidence that drug treatment of mild hypertension reduces mortality is not as convincing as that for treatment of moderate and severe hypertension.

Earlier use of drastic low-sodium diets was usually limited to people with severe hypertension. In recent years, though, researchers have tried less restrictive regimens on patients with mild or moderate hypertension. A number of patients have shown improvement with just a moderate decrease in their sodium intake. Some achieved normal blood pressure and no longer needed drugs. Others still had to take medication but could get by on lower doses, with fewer side effects.

The knowledge that patients often stray from low-sodium diets still leads many physicians to turn to drugs first when treating hypertension. And prescribing drugs is easier than trying to persuade patients to change long-established eating habits. But recent success with moderate sodium restriction is convincing an increasing number of physicians that such restriction, along with other non-drug measures, should be the initial treatment for mild hypertension.

Currently, there's a growing trend to treat mild hypertension without drugs. Patients are being encouraged to try sodium restriction and to lose weight if they're overweight. Where appropriate, they are also being urged to make other changes in lifestyle that may help to reduce blood pressure, such as quitting smoking, moderating alcohol intake, getting regular exercise, and cutting down on caffeine consumption. An obvious advantage of the approach is that many of the recommended measures offer health benefits beyond their potential value in treating hypertension.

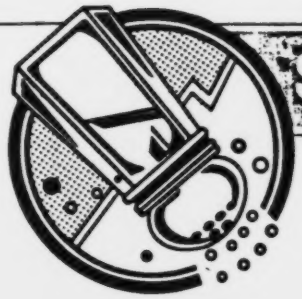
But long-standing habits are seldom changed easily, and overcoming a lifelong fondness for salt is no exception. In the following reports, we will explore some ways of cutting back on salt that may make the task more palatable.

Turn page for "Salt and the diet"

935 mg. per 2-tab dose

550 mg. per ½ can

855 mg. per package



Salt and the diet

Most people don't realize how pervasive sodium is in the American diet until they try to cut down. Salt, or sodium chloride, is the largest source of sodium and ranks second only to sugar as America's favorite food additive.

Sodium is a mineral essential to the normal functioning of the body, which requires a minimum of about 200 milligrams a day. Nature provides a more than adequate supply in foods of animal origin, in vegetables, and even in some water supplies. For instance, three ounces of lean cooked beef contains about 50 milligrams; half a cooked chicken breast, about 70 milligrams. One cup of milk contains about 120 milligrams of sodium, and an egg, about 60 milligrams. Raw celery, carrots, artichokes, and leafy greens such as chard, kale, and spinach are high in sodium, ranging from 25 to 50 milligrams per half-cup.

The amount of sodium in a cup of drinking water ranges from less than 1 milligram to 1,000 milligrams. Local water departments can tell you the sodium content of your area's water.

Water softeners add sodium to drinking water by replacing "hard" minerals with softer ones such as sodium. The harder the water, the more sodium your softener is adding. The amount of sodium added generally ranges up to about 25 milligrams per cup.

Overall, naturally occurring sodium accounts for only about one-third of the sodium in American diets. The rest comes from what people themselves add by sprinkling salt on foods, or what manufacturers add to processed foods.

The salt shaker

For many families, a large portion of the sodium intake is from salt added in the cooking or at the table. But shaking on the salt may be done as much out of habit as out of taste. The taste, we know, is an acquired one. Short of throwing away the salt shaker, how does someone who wants to cut down on sodium break the salt habit?

The first step is to reacquaint the taste-buds with unsalted foods. Omit the salt used in cooking—you'll miss that the least. Instead, try using more flavorings, such as onion, and doubling the quantity of herbs you normally use. Once you are at the table, practice tasting the food before you reach for the salt.

Storing the salt shaker away from the table in a not-so-convenient location can also inhibit use. You might also try fooling your salt habit by using a shaker that has smaller or fewer holes.

Using spices and herbs creatively is not a hard habit to get into, and there are numerous low-sodium cookbooks now that give guidelines for cooks. For example, with fish you can use a combination of such delicate herbs and spices as white pepper, lemon peel, celery seeds, and poultry seasoning. With meat, you need a combination that's more hearty and robust: Try black pepper, red bell peppers, celery seed, dry mustard, onion powder, garlic powder, thyme, oregano, and poultry seasoning. Avoid seasonings that come in salt form, though, such as garlic salt and onion salt, which are very high in sodium. Green vegetables such as snap beans, broccoli, and peas go well with basil, marjoram, tarragon, thyme, savory, mustard seed, rosemary, dill, or oregano.

Using a salt substitute may be another way to reduce sodium. We tested a number of shake-on products for this report.

Finally, you might want to try some of the new lower-sodium foods now available in the supermarkets. These products are alternatives to processed foods that are traditionally high in sodium, such as potato chips, soups, peanut butter, and tomato sauce. We tested a number of them, too.

Sodium at the supermarket

Families who eat a lot of processed and convenience foods (and fast foods, for that matter) are consuming far more sodium than they need. Sodium salts are a way for manufacturers to inexpensively enhance the flavor of foods that have lost natural flavor in processing; they are also used to preserve food.

In processed meats, sodium salts may often be used to increase tenderness by inhibiting the hardening of muscle fibers in cooking and/or to increase water retention. In canned vegetables and fruits, salt may be used to preserve color or as a part of the processing. For instance, some vegetables are sorted in brine; the overripe ones sink and the less ripe ones float. Most canned whole tomatoes and some canned or frozen fruits are bathed in a caustic solution of sodium hydroxide to remove their peel.

Cheese has a lot of sodium because salt plays such an important role in its processing. Sodium chloride retards the growth of undesirable organisms, helps coagulate the milk mix to form curds and whey, and also acts to develop flavor.

In baked goods, salt acts on the flour and yeasts. It controls yeast fermentation rates and has a stiffening effect on dough, which can make a firmer product. Other sodium salts in the form of baking soda and baking powder provide a gas in dough that helps leaven baked goods.

Anyone would recognize some processed foods as salty: olives, anchovies, dill pickles, sauerkraut, soy sauce, bacon, hot dogs, snack foods. Other high-sodium foods are not so obviously salty: tomato juice, cottage cheese, instant pudding, instant hot cereals.

How to know? Labels don't usually tell you how much salt has been added. Sodium labeling, which is under the jurisdiction of the U.S. Food and Drug Administration, is presently entirely voluntary unless the manufacturer makes a sodium claim on the label, in which case the sodium content per serving must appear. About 30 percent of FDA-regulated products are now labeled with sodium content. The wording of the sodium claims can be confusing, however.

The FDA has proposed rules for the wording of sodium claims, and the rules should be in final form next year. According to the proposed rules, "sodium free" will mean five milligrams or less sodium per serving; "low sodium," 35 or less; "moderately low sodium," 140 or less. "Reduced sodium" will indicate that the product has been reduced in sodium by 75 percent or more.

The FDA proposal also includes a provision to require that sodium content be listed on nutrition labels. Though nutrition labeling is voluntary unless a manufacturer makes a nutritional claim or fortifies the product, approximately half of FDA-regulated products now include such labeling.

The medicine you take may also be a surprisingly high source of sodium—especially some over-the-counter drugs that are taken frequently over extended periods. Those include certain pain relievers, antacids, cough medicines, laxatives, or sedatives. For example, *Alka-Seltzer* with aspirin contains about 935 milligrams of sodium per dose; *Vicks Formula 44* cough syrup contains 105 milligrams; and *Rolaids*, 70 milligrams. Some OTC drugs list sodium content on their labels. For other drugs, your pharmacist or physician should be able to give you the sodium content.

Salt substitutes

It wasn't until the late 1970's, when worries about sodium made headlines, that many people became "sodium conscious" and began to notice salt substitutes. For more than 20 years, one manufacturer had been quietly using potassium chloride to try to replace the taste of salt. On that wave of sodium-consciousness came many new brands of salt substitutes, along with heavy promotion.

A lot of consumers, it seemed, were willing to try the products once. But they haven't gone back, with good reason. The unhappy fact is that potassium chloride doesn't taste much like salt. And it can be risky for the very people who must control the amount of sodium in the diet.

Most of the salt substitutes now carry a warning on their labels to use only on advice of a physician. Many people who must limit their sodium intake may also need to control potassium intake. If the potassium in their blood increases to harmful levels, serious disruption of normal heart function may result. Such individuals should avoid these products.

The average healthy adult interested in reducing sodium intake can safely use these products: normally functioning kidneys are capable of excreting excess potassium.

But would a healthy adult *want* to use the products? We tested 18 brands to find out. Nine of these products contain potassium chloride and other chemical compounds. Eight others have seasonings in addition to potassium chloride. One product is half potassium chloride and half sodium chloride.

Shake and taste

Our sensory consultants tested the products sprinkled on unsalted tomato juice and cooked in mashed potatoes.

Morton Lite Salt, the one brand that's half sodium chloride and half potassium chloride was, not surprisingly, judged best because it tasted most like salt. (It contains 1100 milligrams of sodium per teaspoon, compared with about 2200 milligrams in a teaspoon of table salt).

Among the substitutes without sodium, two tasted fairly good whether sprinkled on or cooked in: *Estee for Meats* and *Sweet 'N Low Nu-Salt*. Two other products—*Adolph's* and *Estee for Vegetables*—tasted fairly good when sprinkled on the tomato juice, less so when cooked in the potatoes. The other 13 products were judged relatively fair or poor.* In the poorest ones the bitter taste of the potassium chloride nearly overwhelmed the taste of the food. None of these products can be considered true sensory substitutes for table salt.

Recommendations

Only *Morton Lite Salt* came close to approximating the taste of real salt. Although it contains too much sodium for people on a strict low-sodium diet, *Morton Lite Salt* might be perfect for healthy people who want to lower their sodium intake. It costs much less than the other salt substitutes—1 cent per teaspoon, compared to an average of 6 cents for the other tested products.

If you want to cut out salt completely, try either *Adolph's*, *Estee for Meats*, *Estee for Vegetables*, or *Sweet 'N Low Nu-Salt*. Or use your own combinations of herbs and spices. (There are also premixed seasonings that you might try. One of them, a new product called *Mrs. Dash*, is being heavily promoted as a salt substitute. But we didn't test such products for this report.)

* Judged fair, in alphabetical order: *Bio-Sal, Diet-Mel Salt-It, McCormick Dietetic, Morton*. All are seasoned substitutes. The poorest: *Durkee, Featherweight* (seasoned), *Featherweight "K" Salt, Golden Harvest Not Salt, McCormick Dietetic, Morton, NoSalt, Real Taste Salt Free, Real Taste Salt Free* (seasoned).

Lower-s... alternatives

The low-salt revolution is having an impact on its most formidable enemy: processed foods. New national-brand lower-sodium items—including everything from soup to nuts—are being introduced at an average rate of seven per month, according to an industry source.

The marketing push began in 1981 when no-salt canned vegetables first appeared on supermarket shelves as store brands. Stop & Shop supermarkets pioneered the effort on the East Coast and Jewel T in the Middle West. Del Monte and Libby jumped on the bandwagon in 1982.

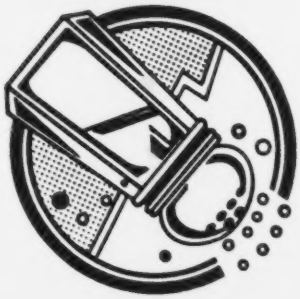
To increase the visibility of these alternatives, many supermarkets have begun placing them alongside their saltier counterparts rather than relegating them to the dietetic section. And prices have gradually come down; a good many low-sodium foods now cost the same as or close to their salty twins.

Depending on the food, manufacturers are reducing sodium in different ways. Some processed foods use sodium compounds as preservatives; manufacturers are now experimenting with other methods of preservation that may sometimes require you to refrigerate the product after opening. Other foods "need" salt to enhance what's left of natural flavors after processing. To lower the sodium in these foods, manufacturers are trying salt substitutes such as potassium chloride, various flavoring and seasoning ingredients, and sometimes complete reformulation of the recipe itself. Some foods—peanut butter, for instance—survive processing with most of their flavor intact, but have always been salted anyway. Now, manufacturers are simply cutting out the salt.

Tasting the twins

For this report, CU shoppers prowled the aisles of our local supermarkets to purchase lower-sodium products that had salty twins to which we could compare them. We chose 12 such pairs, representing a wide range of foods: snacks, soups, cheese, tuna, tomato sauce, broth, margarine, and peanut butter.

Our sensory consultants reported favorably on the flavor of almost half the lower-sodium products tested. Those five products, which are listed first in the paragraphs on the next page, cost about the same as their salty twins and would be good buys for people watching their sodium intake. *Continued*



B an' G Bread & Butter Pickles. The sodium-free version (which comes in a smaller jar) was almost identical in taste to its salty counterpart. Because it has no added salt, the new version had an aftertaste of sweetness, but our taste experts didn't find that objectionable.

Per one-ounce portion:

	Regular	Low-Salt
Cost:	8¢	13¢
Sodium:	60 mg.	5 mg.

Del Monte Whole Kernel Corn. Except for being slightly sweeter and having fewer broken kernels, the salt-free product was identical to its salt-added brandmate.

Per one-half cup portion, drained:

	Regular	Low-Salt
Cost:	14¢	15¢
Sodium:	115 mg.	5 mg.

Fleischmann's Margarine. The salt-free margarine was tasty. It differed in minor ways from the salted version: Spreading evenly was not as easy, the yellow color was more pale, and some oily coating was left in the mouth.

Per one-tablespoon portion:

	Regular	Low-Salt
Cost:	3¢	3¢
Sodium:	95 mg.	2 mg.

Planters Dry-Roasted Peanuts. The roasted peanuts without salt were distinctly nuttier than the same nuts with salt. They were, however, slightly drier, which caused particles to stick between the teeth.

Per two-tablespoon portion:

	Regular	Low-Salt
Cost:	22¢	21¢
Sodium:	240 mg.	15 mg.

Wise Potato Chips. Both versions were tasty. The unsalted chips tasted and smelled more like baked potatoes and the salty ones more like fried potatoes.

Per one-ounce portion:

	Regular	Low-Salt
Cost:	18¢	19¢
Sodium:	185 mg.	15 mg.

Del Monte Tomato Sauce. The salty sauce got demerits for tasting too salty and the lower-sodium tomato sauce for lacking typical tomato flavors. The lower-sodium sauce had a slightly metallic taste that disappeared when the sauce was combined with pasta. The lower-sodium sauce was also easily improved with the addition of herbs and spices.

Per eight-ounce portion:

	Regular	Low-Salt
Cost:	27¢	30¢
Sodium:	1430 mg.	150 mg.

Peter Pan Creamy Peanut Butter. The low-sodium peanut butter was objectionably adhesive, sticking to the roof of the mouth more than the salted version. That can probably be remedied by serving it on bread with jam. Otherwise, our taste experts judged the peanut butter predominantly sweet and peanutlike, although less flavorful than its salty twin.

Per two-tablespoon portion:

	Regular	Low-Salt
Cost:	10¢	19¢
Sodium:	160 mg.	10 mg.

Campbell's Chicken Noodle Soup (condensed) and Chicken with Noodles Soup (ready to serve). Both versions were bland and lacked distinct chicken flavor. In both, the chicken pieces were dry and chewy—best not chewed but swallowed whole with the liquid. Our experts found the salty soup (the *Chicken Noodle*) too salty; the other, slightly sweet and spicy. The unsalted soup perked up with the addition of seasonings. Or you might try one of the better salt substitutes we tested.

Per 10 ¾-ounce portion:

	Regular	Low-Salt
Cost:	19¢	70¢
Sodium:	1110 mg.	130 mg.

Campbell's Chunky Vegetable Beef Soup (ready to serve). The soup without salt tasted sweeter than its twin, which was also bland. Both had soft or mushy vegetables and very little beef flavor. What beef we found was tough, stringy, and dry. The low-sodium soup was better with the addition of some seasonings. Little, aside from adding fresh vegetables and beef chunks, would make either soup really tasty.

Per 10 ¾-ounce portion:

	Regular	Low-Salt
Cost:	77¢	99¢
Sodium:	935 mg.	90 mg.

Chicken of the Sea Tuna, chunk light. When chewed, both versions were dry. Regular mayonnaise improved the regular tunafish; low-sodium mayonnaise did the same for the low-salt version.

Per three-ounce portion:

	Regular	Low-Salt
Cost:	49¢	53¢
Sodium:	155 mg.	110 mg.

Borden Lite-Line American Processed cheese. Neither of these dietetic cheeses came close to being tasty. Both, when melted on bread, did not spread but developed what our taste experts described as "plastic-looking" bubbles. The lower-sodium product was bitter and sticky in the mouth.

Per one-slice (¾-ounce) portion:

	Regular	Low-Salt
Cost:	12¢	14¢
Sodium:	270 mg.	125 mg.

Herb-Ox Chicken Flavor Broth and Seasoning. Real chicken flavor was very slight in the regular broth and absent in the unsalted. The unsalted broth was both bitter and sweet, with an unpleasant aftertaste. It also cost twice as much as its salty twin.

Per one packet portion (0.2 ounce for regular, 0.15 for no-salt):

	Regular	Low-Salt
Cost:	7¢	14¢
Sodium:	975 mg.	5 mg.

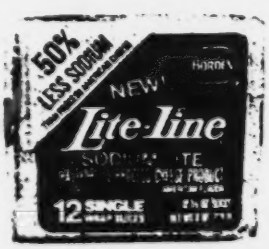
Recommendations

Quite a few good-tasting lower-sodium processed foods are available to anyone wanting to reduce sodium intake. Note, however, that manufacturers often jack up the cost of the lower-sodium products, sometimes by reducing the size of the package.

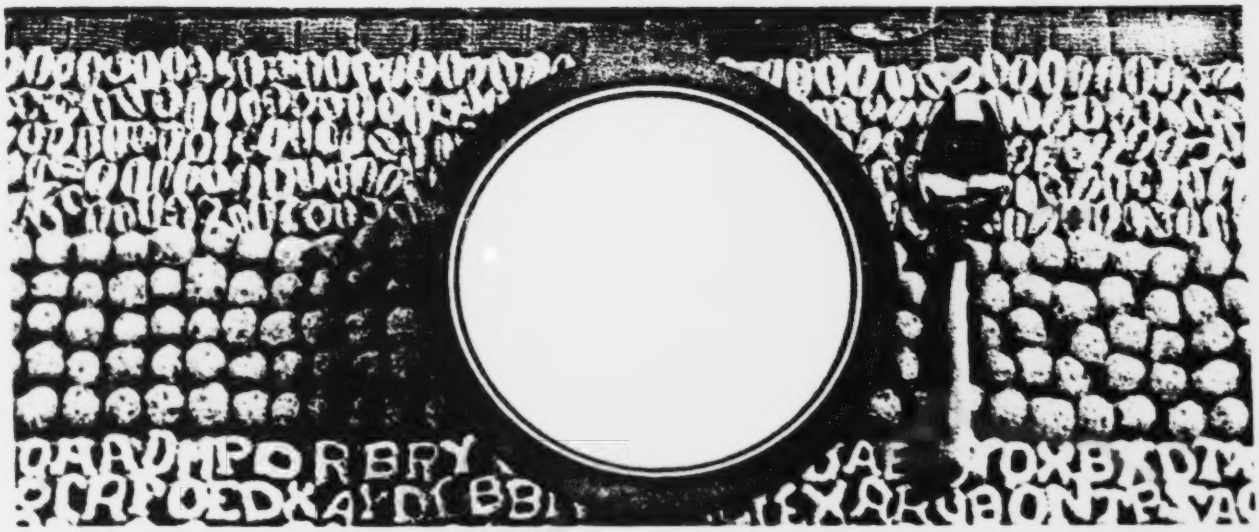
Note, too, that some label claims about salt can be misleading. For instance, the *Wise* potato chips are labeled "no salt added," implying that the chips are salt-free. But they contain the salt natural to potatoes. Always look at the salt content on the back of the label. ■

130 mg. per 10 ¾-oz. serving; 1110 mg. in regular

5 mg. per ½-cup serving, drained; 115 mg. in regular



120 mg. per slice; 270 mg. in regular



Breakfast Cereal

There are few things more enticing to youngsters than brightly coloured boxes of cereal boasting cartoon characters, contests and prizes. As parents know, children can be quite persuasive when they see these bold boxes on display. But the brightest aren't always the best. Manufacturers have responded to our national sweet tooth (and to competition) by offering pre-sweetened cereals along with the other unsweetened, ready-to-eat puffed and flaked options.

CAC's testing of 34 ready-to-eat breakfast cereals showed that pre-sweetened and salty breakfast cereals may be more appropriately considered a snack food than the main portion of a balanced meal.

You need to eat a balanced breakfast. As the word itself suggests, it *breaks* the long night's *fast*. Unless you're a midnight moocher, by morning your body has been without food for eight or more hours. During that time, your body's metabolic rate slowed, giving your body the break it needed for rest and repair. Your energy level will be low in the morning and eating breakfast is necessary to revitalize you.

Your breakfast can contain either a lot of empty calories or a heathy combination of fibre, carbohydrates, protein and fat along with essential vitamins and minerals. Cereals, along with breads, are one of Canada's Food Guide's four food groups and are important sources of carbohydrates, thiamin, riboflavin, niacin and iron. Adding milk helps to provide a moderate amount of usable protein for your body, and eating fruits or drinking juice helps to round out the meal. But alone, breakfast cereal just doesn't make it.

Pre-sweetened, salted breakfast cereal: more a snack than a meal.

Which One to Buy

Do you eat cereal for breakfast? If so, you're like millions of other Canadians. But if you're concerned about the amount of salt and sugar in your diet, you should be choosy about the brand you eat.

Many of the 34 ready-to-eat breakfast cereals were high in either sugar or salt, sometimes both. *Kellogg's Apple Jacks* had the highest sugar content, 12.7 g per 28 g serving or close to a tablespoon of sugar. At 17¢ per serving, *Apple Jacks* is an expensive way to eat sugar. *Cheerios*, while low in sugar, had the greatest amount of sodium: 307 mg per serving. A serving of *Dominion generic Sugar Sweet Cereal* had lots of both: 11.6 g of sugar and 210 mg of sodium.

For people who don't want added sugar or salt on their breakfast cereals, you can choose from *Nabisco Shredded Wheat*, *Quaker Muffets*, and most of the puffed rice and wheat brands in our test. Except for *Prairie Maid Wheat Puffs* which had added salt, the other puffed rice and wheat brands contained less than 21 mg of sodium per serving, no added sugar, and cost less than 9¢ per serving.

Too much of a good thing

CAC chemically analysed the 34 breakfast cereals for sugar and salt, then looked at fibre content. Because diets high in sugar and salt and low in fibre have been linked to certain diseases, CAC downrated breakfast cereals with those characteristics.

Children need no more than 35 mg of sodium per kilogram of body weight, 700 mg for a 20 kg child. Adults need no more than 9 mg of sodium per kilogram of body weight, 495 mg for a 55 kg woman, 675 mg for a 75 kg man.

Both adults and children require the carbohydrates (energy) that sugar provides, but most consume far more than needed. Furthermore, nutritionists prefer us to meet our daily carbohydrate requirement with foods that provide more than simply energy (calories). Though pre-sweetened breakfast cereal provides more than just empty calories, its added sugar is unnecessary to a balanced diet.

To the test

Under the familiar brand names of *Kellogg's, Nabisco, Post,* and *General Mills,* you'll find several different cereals — both sweetened and unsweetened. Overall, the whole grain, unsweetened cereals were less expensive and lower in sugar and salt.

Sucrose, or table sugar, is a widely used ingredient in food manufacturing. When digested, it breaks down into fructose and glucose, and provides food energy. The amount of added sucrose in cereals varies considerably. The nine 100 per cent whole-grain cereals in our test had no sucrose added. Two cereals, *Weetabix* and *General Mills Cheerios,* contained less that one gram (g) of sucrose per 28 g serving.

In the majority of samples, the sucrose content ranged from 1.7 to 12.7 g per serving. One 5 millilitre (mL) measure of sugar is 5 g — about a teaspoon. A 15 mL measure is 15 g — about a tablespoon.

So, when you eat a serving of *Kellogg's Apple Jacks* with 12.7 g of sucrose you get almost a tablespoon of sugar! This is an expensive way to eat sugar: a tablespoon of sugar costs about 1.5¢; one serving of *Apple Jacks* costs 17¢. *Post Alpha-Bits* and *Kellogg's Froot Loops* have almost as much with 12.1 and 12.0 g of sucrose per serving each. This amount can easily double if cereal eaters add sugar at the table or take big servings.

Cereals with under 5 g of sucrose per serving — *Kellogg's Corn Flakes, Rice Krispies* and *Special "K"; General Mills Wheaties;* and *Post Grape-Nuts* — were considered second-best nutritionally to the whole grains. Considering how much sugar is consumed with the average breakfast of cereal, orange juice, toast and jam, an unsweetened cereal to which little or no sugar is added is your healthiest choice. Sugar is already present in the juice and jam, and some adults add it to coffee or tea as well.

If you eat cereal for breakfast, make juice part of the meal. The Vitamin C in fruit juice allows the iron in cereal to be more easily absorbed into the body.

Put salt on my cereal?

Like sugar, sodium (usually in the form

How we Tested

Based on our December 1982 survey, we purchased 34 different types of ready-to-eat breakfast cereal. The largest available sizes were purchased in each. *Quaker Peter Pan Puffed Wheat* and *Puffed Rice* were available only in Ontario, Québec and the Atlantic provinces. *Prairie Maid Puffed Wheat* and *Puffed Rice* was sold only in Western Canada and Ontario. All other brands were available across the country.

Cost: Cost per serving ranged from $0.04 to $0.17, using manufacturer's suggested serving sizes.

Ratings: Recommendations are based on sugar, salt and fibre content levels, and price per serving. Salt and sugar content were placed as the determining factors for overall ratings.

Technical Testing: Sodium chloride (NaCl or common table salt) levels were identified using a specific ion electrode and a pH meter. The amount of NaCl per two grams (g) of cereal was identified and then calculated for every 28 g serving, or manufacturer's recommended serving. The sodium share of this number was calculated based on the the relative atomic mass. The "Lane and Eynon Method for Determination of Sucrose as Invert Sugar" was used to determine sucrose levels. Percentages were then converted to grams of sucrose per 28 g serving, or manufacturer's recommended serving. Sucrose analysis was used in order to identify added amounts of sweetener since other sugars, such as maltose, are found naturally in all grains.
The amount of cereal fibre stated on packages was rated according to the suggested amount deemed beneficial by Health and Welfare Canada.

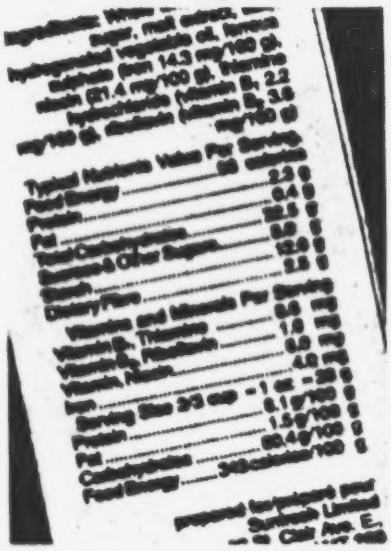
Ready-to-Eat Breakfast Cereals

Brand (alphabetical within rating categories)	Price	Type of grain(s)	Mass (actual)	Number of servings*/ cost each	Sucrose per serving	Sodium per serving	Fibre per serving**
GOOD (Low level of sodium and no sucrose)							
Loblaws No-Name Puffed Rice***	$1.98	(R)	537 g	26/8¢	0 g +	7 mg +	0.3 g –
Loblaws No-Name Puffed Wheat***	$1.49	(W)	450 g	29/5¢	0 g +	2 mg +	3.4 g –
Nabisco Shredded Wheat	$1.68	(W)	628 g	24/7¢	0 g +	8 mg +	2.5 g –
Newport Fluffs***	$1.36	(W)	240 g	17/8¢	0 g +	21 mg +	3.4 g –
Prairie Maid Rice Puffs***	$1.43	(R)	267 g	18/8¢	0 g +	7 mg +	0.3 g –
Quaker Muffets	$1.31	(W)	553 g	12/11¢	0 g +	8 mg +	2.5 g –
Quaker Peter Pan Puffed Rice***	$1.39	(R)	515 g	36/4¢	0 g +	7 mg +	0.3 g –
Quaker Peter Pan Puffed Wheat***	$1.39	(W)	460 g	29/5¢	0 g +	2 mg +	3.4 g –
SATISFACTORY (Moderate level of sodium and or sucrose)							
A & P Generic Wheat Flakes with Raisins	$2.39	(W)	821 g	29/8¢	6.7 g ○	25 mg +	3.0 g –
General Mills Crispy Wheats 'n Raisins	$2.53	(W)	510 g	18/14¢	6.9 g ○	148 mg ○	1.3 g –
Nabisco Shreddies	$1.68	(W)	696 g	24/7¢	4.0 g ○	132 mg ○	1.8 g –
Nabisco Bran Bites & Raisins	$1.91	(W)	579 g	21/9¢	6.9 g ○	116 mg ○	2.2 g –
Loblaws No-Name Wheat Flakes with Raisins	$2.59	(W)	810 g	29/9¢	5.0 g ○	28 mg +	2.5 g –
Post Fruit & Fibre	$1.95	(W)	414 g	14/14¢	6.8 g ○	25 mg +	3.7 g –
Post Grape-Nuts	$1.49	(W)	392 g	13/11¢	1.7 g ○	132 mg ○	3.6 g –
Prairie Maid Wheat Puffs***	$1.00	(W)	180 g	13/8¢	0 g +	105 mg ○	3.4 g –
Quaker Life	$1.82	(O), (S), (C)	550 g	20/9¢	5.2 g ○	146 mg ○	2.5 g –
Weetabix	$1.83	(W)	456 g	14/13¢	– 1.0 g +	94 mg ○	2.5 g –
POOR (High level of sodium and or sucrose)							
Dominion Generic Sugar Sweet Cereal	$1.95	(O), (C)	490 g	16/12¢	11.6 g –	210 mg –	0.5 g –
General Mills Cheerios	$1.75	(O), (C)	445 g	15/12¢	– 1.0 g +	307 mg –	1.0 g –
General Mills Golden Grahams	$2.57	(C), (W)	508 g	18/14¢	8.7 g –	234 mg –	2.5 g –
General Mills Lucky Charms	$1.99	(O), (C)	408 g	14/14¢	10.4 g –	105 mg ○	0.6 g –
General Mills Wheaties	$1.70	(W)	374 g	13/13¢	2.9 g ○	226 mg –	2.1 g –
Kellogg's Apple Jacks	$2.54	(O), (C), (W)	432 g	15/17¢	12.7 g –	96 mg ○	0.2 g –
Kellogg's Corn Flakes	$1.45	(C)	537 g	19/8¢	2.5 g ○	259 mg –	0.4 g –
Kellogg's Froot Loops	$1.97	(O), (C), (W)	454 g	15/13¢	12.0 g –	95 mg ○	0.2 g –
Kellogg's Raisin Bran	$2.66	(W)	808 g	29/9¢	6.2 g ○	242 mg –	2.5 g –
Kellogg's Rice Krispies	$2.44	(R)	739 g	26/9¢	2.5 g ○	260 mg –	0.03 g –
Kellogg's Special K	$2.09	(R), (W)	490 g	17/12¢	2.5 g ○	198 mg –	0.3 g –
Nabisco Golden Honeys	$1.71	(O), (C), (B)	363 g	13/13¢	8.0 g –	81 mg ○	0.5 g –
Post Alpha Bits	$2.16	(O), (C)	451 g	16/14¢	12.1 g –	129 mg ○	0.8 g –
Post Honeycomb	$2.27	(O), (C)	409 g	14/16¢	9.2 g –	120 mg ○	0.4 g –
Post Sugar Crisp	$2.12	(W)	406 g	14/15¢	11.1 g –	33 mg +	1.1 g –
Quaker Cap'n Crunch	$1.68	(O), (C)	360 g	13/13¢	9.4 g –	152 mg ○	0.5 g –

Best to worst [illegible] Grains: (W) = wheat; (O) = oats; (R) = rice; (C) = corn; (B) = barley; and (S) = soybean. *One serving is 28 grams. **Ratings are based on manufacturers' stated fibre content. ***Due to volume, one serving weighs 14 grams.

Manufacturer/Distributor: General Mills — *Cheerios, Crispy Wheats 'n Raisins, Golden Grahams, Lucky Charms* and *Wheaties*: General Mills Canada Inc., Grocery Products Division, 1310 Martin Grove Rd., Box 505, Rexdale ON M9W 4X4. *Kellogg's — Apple Jacks, Corn Flakes, Froot Loops, Raisin Bran, Rice Krispies* and *Special K*: Kellogg Salada Canada Inc., 6700 Finch Ave. W., Rexdale ON M9W 5P2. Nabisco — *Bran Bites & Raisins, Golden Honeys, Shredded Wheat* and *Shreddies*: Nabisco Foods, Division of Christie Brown & Co. Ltd., 2150 Lakeshore Blvd. W., Toronto ON M8V 1A3. [illegible] Puffs: Jackson-Newport Foods Ltd., 10500 Secant Ave., Ville d'Anjou PQ H1J 1S3. *Loblaws No-Name — Puffed Rice, Puffed Wheat* and *Wheat Flakes With Raisins*: prepared by Suntresh Ltd., [illegible] Ltd., 22 St. Clair Ave. E., Suite 601, Toronto ON M4T 2S5. *Dominion generic Sugar Sweet Cereal*: prepared by Quintana Inc. for Dominion Stores Ltd., 605 Rogers Rd., Toronto ON M6M 1B9. A & P generic *Wheat Flakes With Raisins*: prepared by Canfood Ltd., for The Great Atlantic & Pacific Co. of Canada, 5559 Dundas St. W., Islington ON M9B 1B9. *Post — Alpha Bits, Fruit & Fibre, Grape-Nuts, Honeycomb* and *Sugar Crisp*: General Foods Inc., Box 4019, Station A, Toronto ON M5W 1J6. *Prairie Maid — Rice Puffs* and *Wheat Puffs*: Thomas J. Lipton Inc., 2180 Yonge St., Toronto [illegible] *Quaker — Cap'n Crunch, Life Cereal, Muffets, Peter Pan Puffed Rice* and *Peter Pan Puffed Wheat*: Quaker Oats Co. of Canada Ltd., Quaker Park, Peterborough ON K9J 7B2. *Weetabix*: Weetabix of Canada Ltd., 6101 Yonge St., Willowdale ON M2M 3W2.

Fortification It's Getting Better



Cereals, along with breads, are one of the four food groups in *Canada's Food Guide*. The *Guide* says, "breads and cereals, especially whole grain and enriched products, are important sources of carbohydrate, thiamin, riboflavin, niacin and iron. In fact, it is difficult to meet the *Recommended Nutrient Intake for Canadians* for iron and thiamin without these foods...they make a significant contribution to protein and fibre needs".

The processing of cereals robs grains of much of their nutrient and fibre value, especially when the bran is removed. Some of this loss is restored through fortification — adding back some nutrients. Fortification for all nutrients is not mandatory in this country, but the Canadian *Food and Drug Regulations* currently makes provision for the addition of iron and some B-vitamins to breakfast cereals.

Whole grain cereals don't need fortification because they aren't processed nearly as much. They retain all the iron and B-vitamins present before processing.

Until lately, many processed cereals have not been fortified sufficiently to equal the nutrient content of whole grains. While many nutrients, including protein and fibre content, are lost during processing, only iron and three B-vitamins are being added back to the cereal.

Health and Welfare Canada is proposing to add more nutrients to rectify this shortfall. Thiamine, Niacine, Vitamin B6, Folic Acid, Pantothenic Acid, Magnesium, Ironpantothenic Acid are to be added, and there will be one standard level for each nutrient instead of the current maximum and minimum requirements.

of salt) is all too abundant in our diets. If you want to know where all the sodium comes from, here's a breakdown: 28.5 per cent from red meats; 27.2 per cent from baked goods; 17 per cent from vegetables; and 11 per cent from milk. And that's without adding salt at the table!

Kellogg nutritionists told CAC that less than 2.9 per cent of our total salt intake comes from cereal. Cereal grains contain some salt naturally (as they contain some sugar naturally) and more salt is added during processing. There's no restriction on how much salt or sugar can be added during manufacturing.

CAC analysed for sodium chloride (NaCl or table salt) and found that small amounts of salt are naturally present in cereals to which no salt has been added — those labelled as whole grain. Of the other samples that claimed salt as an ingredient, five had relatively low levels of under 33 mg of sodium per serving: *A&P generic Wheat Flakes With Raisins; Loblaws No-Name Wheat Flakes With Raisins; Newport Fluff; Post Sugar Crisp* and *Fruit & Fibre*. The remaining cereals ranged from about 80 to over 300 mg of sodium per serving. *General Mills Cheerios* was the saltiest of the bunch with 307 mg per serving.

With a daily sodium requirement in the 450 to 600 mg range, you can see why salt is a real concern in cereal. One 28 g serving of *Cheerios* would satisfy 50 per cent or more of your daily sodium needs.

Kellogg may be correct when it states that only 2.9 per cent of the average Canadian's daily *intake* is derived from cereal sources. That's a reflection of our high salt intake from all sources. And, when cereal is treated as a snack (as presweetened, salted cereals often are), cereal can contribute even more sodium to the diet.

Fibre

Fibre and the "F" diet seem to be buzz words in nutrition circles these days. Fibre is essential to our diets because it adds bulk and absorbs water, thereby making it easier for food to move along the digestive tract. It's naturally present in unprocessed foods like fruit, vegetables and whole grains.

Processing often removes fibre from foods. The more processed food you eat, the less fibre you're probably ingesting. This isn't just a source of inconvenience; extended low-fibre diets can be detrimental because they lack fibre's laxative effect on the gastric-intestinal system.

Cereal fibre — wheat and the bran from wheat kernels, especially — is the best to eat, and breakfast cereals are a popular source of fibre supplementation. Most cereal manufacturers state fibre content on the packaging. However, Health and Welfare Canada advised that guidelines exist to control manufacturers' claims about the beneficial effects of fibre content in cereal. Health and Welfare said a cereal should contain around 7 g of dietary fibre per serving. Otherwise, it really won't have any of beneficial effects associated with eating fibre foods.

One cereal in our test was heavy on advertising copy, but short on fibre. *Post Fruit & Fibre* claimed that it was "a fibre cereal. Fibre provides the bulk in your diet that helps keep your digestive system running smoothly." and "Post Fruit & Fibre keeps the whole wheat grain and adds additional wheat bran to make a flake with extra fibre." However, *Post Fruit & Fibre's* stated fibre content was only 3.7 g, better than most of the other cereals but well below the 7 g of dietary fibre suggested by Health and Welfare Canada to support advertising claims.

As it turned out, none of the cereals tested was that high in fibre. Among the tested products, *Post Grape-Nuts* and *Fruit & Fibre; Loblaws No-Name Puffed Wheat; Newport Fluffs; Prairie Maid Wheat Puffs;* and *Quaker Peter Pan Puffed Wheat* had the highest levels of the lot, but they merely topped 3 g of fibre per serving. Lower levels of fibre can be effective for some individuals, but it depends on what else you're eating.

Kellogg's Rice Krispies provide barely any fibre at all — 0.03 g per serving. If you prefer this cereal because of taste, or its low salt and sugar content, you can always boost the fibre content by adding fresh fruit.

In fact, adding fresh or dried fruits, wheat germ, bran or even chopped nuts to any cereal is a good and tasty way to put more fibre *and* sweetness into the morning meal. □

Staff Project Team: Margaret Harvey with Kris Schumacher and David Sinanni.

Breakfast Cereals:

The Real Sugar Bowl

CEREAL	SUGAR CONTENT (Percent)
Less than 10%	
Concentrate	9.9
Raisin Bran (Post)	9.6
Crisp Rice	8.8
Rice Chex	8.5
Total	8.1
Corn Flakes (Kellogg)	8.1
Crispy Rice	7.3
Grape Nuts	6.6
Corn Chex	5.5
Peanut Butter	5.2
Wheaties	4.7
Special K	4.4
Corn Total	4.4
Product 19	4.1
Post Toasties	4.1
Alpen (Natural	3.8
Puffed Wheat	3.5
Grape Nut Flakes	3.3
Wheat Chex	2.6
Uncle Sam Cereal	2.4
Puffed Rice	2.4
Cheerios	2.2*
Shredded Wheat (spoon size)	1.3 (per biscuit)
Shredded Wheat (large size)	1.0 (per biscuit)
NONE	

10% or more

Super Sugar Chex	24.5
Heartland (Natural)	23.1
Fortified Oat Flakes	22.2
Granola (w/almonds & filberts)	21.4
All Bran	20.0
100% Bran	18.4
Granola (natural)	16.6
40% Bran Flakes (Kellogg)	16.2
Brown Sugar-Cinnamon Frosted Mini-Wheats	16.0
Team	15.9
40% Bran Flakes (Post)	15.8
Sugar Frosted Corn Flakes	15.6
Granola w/raisins	14.5
Granola w/dates	14.5
Life	14.5
Buckwheat	13.6
Heartland w/raisins	13.5
Raisin Bran (Kellogg)	10.6*
Rice Krispies	10.0*

25% or more

Sugar Pops	37.8*
Frosted Mini Wheats	33.6
Sugar Sparkled Corn Flakes	32.2
Brand Buds	30.2
Sugar Frosted Flakes	29.0*

40% or more

Pink Panther	49.2
Honeycomb	48.8*
Froot Loops	47.4*
Trix	46.6*
Cocoa Crispies	45.9*
Baron Von Redberry	45.8
Vanilly Crunch	45.8
Boo Berry	45.7
Quisp	44.9
Orange Quangaroos	44.7
Count Chocula	44.2
Frosted Flakes	44.0

Frankenberry	44.0
Kaboom	43.8
Captain Crunch Crunchberry	43.4*
Captain Crunch	43.3*
Cocoa Puffs	43.0*
Super Sugar Crisp	40.7*
Sir Grapefellow	40.7
Alpha Bits	40.3

50% or more

Super Orange Crisp	68.0
Sugar Smacks	61.3
King Vitamin	58.5
Fruit Pebbles	55.1*
Apple Jacks	55.0*
Cocoa Pebbles	53.5
Lucky Charms	50.4*
Cinnamon Crunch	50.3

* Those cereals marked with an asterisk are cereal products in the top 20 of those advertised on network television (American) in 1976.

Please note that the sugar content listed here represents American manufactured cereals.

Source: Michael J. Lasky, The Complete Junk Food Book, (New York: McGraw-Hill, 1977).

Ways to Use Leftovers

Don't throw good leftover food away. Use your cooking skill - and your imagination - to make leftovers tasty.
Some leftovers make good second meals merely by reheating. Others are better prepared in a new way with seasonings, sauces, crisp toppings. Try leftover fruit in muffins, vegetables in omelets. Substitute 2 leftover egg yolks for 1 whole egg in baked custard. And soups often become richer, more delicious when leftovers are added.

Listed below are some of the ways in which leftovers may be used.

Egg yolks, in -

- Baked custard
- Cakes, cookies
- Homemade noodles
- Mock hollandaise sauce
- Scrambled eggs

Egg whites, in -

- Cakes
- Meringue
- Souffles

Hard-cooked egg or yolk, in -

- Casseroles
- Egg sauce
- Garnish
- Salads
- Sandwiches
- Thousand Island dressing

Buttermilk, in -

- Cakes, cookies
- Quick breads

Sour cream, in -

- Beef stroganoff
- Cakes, cookies
- Salad dressings
- Sauce for vegetables

Cooked meats, poultry, fish, in -

- Casseroles
- Creamed foods
- Curries
- Hash
- Patties
- Potpies
- Salads
- Sandwiches

Meat or poultry drippings and broth, in -

- Gravies
- Sauces
- Soups
- Stews

Cooked potatoes, in -

- Fried or creamed potatoes
- Meat or potato patties
- Meat-pie topping
- Potatoes in cheese sauce
- Salads
- Soups, stews, or chowders

Cooked snap beans, lima beans, corn, peas, carrots, in -

- Casseroles
- Creamed dishes
- Meat, poultry, or fish pies
- Salads
- Sauces
- Scalloped vegetables
- Soups
- Stews
- Vegetables in cheese sauce

Cooked leafy vegetables, chopped in -

- Creamed or scalloped vegetables
- Omelets
- Souffles
- Soups

Vegetable cooking liquids, in -

- Gravies
- Sauces
- Soups
- Stews

Cooked or canned fruits, in -

- Fruit cups
- Fruit sauces
- Gelatin desserts
- Prune cake
- Quick breads
- Salads
- Shortcake
- Upside-down cake
- Yeast breads

Fruit cooking liquids or fruit syrups, in -

- Fruit cups
- Fruit sauces
- Fruit drinks
- Gelatin mixtures
- Tapioca puddings

Cooked wheat, oat, or corn cereals, in -

- Fried cereal
- Meat loaf or patties
- Souffles
- Sweet puddings

Cooked rice, noodles, macaroni, spaghetti, in

- Baked macaroni and cheese
- Casseroles
- Macaroni salad
- Meat or cheese loaf
- Spanish rice

Bread, in -

- Bread pudding
- Croutons
- Dry crumbs for breading meat, poultry, or fish
- Fondues
- French toast
- Meat loaf, salmon loaf
- Sardine puff
- Stuffings

Cookies or unfrosted cake, in -

- Crumb crust for pies
- Ice cream sandwiches
- Refrigerator cake (cake strips or cookies layered with pudding or whipped cream and chilled)
- Toasted cake slices, served with fruit or ice cream

Saskatchewan Health

Promotion

Fast Foods

"Fast food" restaurants are becoming a way of life for many people in Saskatchewan. More people than ever before are eating out and, for many, this often means added inches around the waistline.

One "fast food" meal can contribute over ½ of the body's daily requirement for calories. "Fast foods" are frequently high in fat, salt and sometimes sugar. To cut down calories, as well as fat, sugar and salt, follow these suggestions:

If You Usually Order This ⟶ Try This:

Hamburger — 2 patties	420	calories	Hamburger — 1 pattie	260	calories
Large french fries	320	"	Coleslaw	70	"
Shake	340	"	2% milk	130	"
Deep fried apple pie	300	"	Apple (brought along or when you get home)	70	"
	1380	calories		530	calories

"Fast foods" are not necessarily "junk foods". Studies show that a **carefully selected** meal from a "fast food" outlet can provide ¼ to ⅓ of some of the body's daily need for nutrients. However, vitamins A,C, folic acid and a few other nutrients may be in short supply in those meals. This is because fruits and vegetables are seldom offered on a "fast food" menu.

In summary, "fast food" meals are acceptable as long as they are consumed infrequently and as part of a well-balanced diet.

For approximate caloric values of "fast foods", please turn page.

Approximate Caloric Value of Some Fast Foods

Hamburgers

1 pattie	260
with cheese	310
2 patties	420
with cheese	470

Fish Burger 400

Hot Dog 270
with cheese 330

Pizza ½ of a 10"pizza

Cheese	500
Pepperoni	500
Supreme	575

Soft Drinks

Small	75
Large	125

Shakes

Small	340
Medium	600
Large	840

French Fries

Small	200
Large	320

Onion Rings 300

Deep Fried Apple or Cherry Pie 300

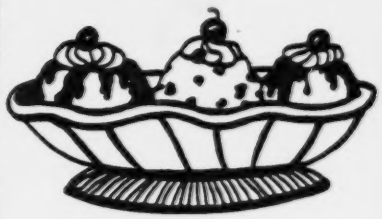
Sundaes

Small	170
Medium	300
Large	400

Ice Cream Cones

		Dipped
Small	110	150
Medium	230	300
Large	340	450

Banana Split 540
Parfait 460



Chicken Dinner

French Fries	340
Gravy	280
3 pieces of chicken	660
Dinner Roll	60
	1340

Snack Pac

French Fries	340
2 pieces of chicken	400
	740

If You Are What You Eat, Are You What You See on T.V.?

What You See

We see or hear 80-125 food ads per day.[1]

On television, the most effective commercials use evocative scenes for their food ads. Happy families picnicing together, people laughing in an amusement park, recreational setting. Funny cartoons that charm and beguile us...[2]

On week-days, nearly 70% of all food advertising (on television) is for non-nutritive beverages, sweets, oils, fats and margarine, baked foods, snacks and relishes.

On week-ends, junk food advertising takes up 85% of all food advertising.[3]

After coffee, soda pop is the most popular beverage and the most advertised food...Over 60% of all soda sold...is cola. More cola is consumed...than milk![4]

Advertisers spend twice as much money advertising soft drinks as they spend on dairy products, fruit and vegetables, unprocessed meat, poultry, fish and eggs combined.[5]

(Even) the package that food comes in is very important...(Crisco oil is) sold in bottles that have an hourglass shape. The bottle is 'thin in the waist' ...this helps to overcome the resistance of weight-conscious women who know that oil is fattening.[6]

Breakfast cereals have an advertising intensity ratio (AIR) of 9.3, the highest of any food. The AIR compares the amount of advertising for a food to that food's importance in the Consumer Price Index (C.P.I.). A ratio of 1 indicates that the amount of advertising for that product equals the amount spent in the family budget. If the ratio is greater than 1, then there is more advertising for that product than what an average family spends. The chart on the next page lists the food product categories and the advertising intensity ratio of each:

Food Product Category	Advertising Intensity Ratio
Breakfast cereal	9.3
Flour mix products	4.6
Ice cream, candy, desserts	3.7
Oils and salad dressings	3.6
Soup, baby and prepared foods	3.5
Soft drinks	2.3
Cookies, crackers, chips, snacks	1.9
Coffee	1.7
Sugar, syrup, jellies	1.2
Bread and rolls	1.1
Rice and pasta	1.0
Canned and processed meat, poultry, fish	.7
Restaurants	.6
Milk, butter, cheese	.4
Fruits and vegetables	.3
Unprocessed meat, poultry, fish and eggs	.0

What You Eat

In 1977, according to the U.S. Government, each person consumed:

100 pounds of refined sugar
55 pounds of fats and oils
300 cans of soda pop
over 200 sticks of chewing gum
over 20 gallons of ice cream
18 pounds of candy
5 pounds of potato chips
over 2 pounds of popcorn, pretzels and snacks
63 dozen doughnuts
over 50 pounds of cakes and cookies[7]

According to the statistics of what is highly advertised and what is seldom advertised, it is not surprising that each person consumes large quantities of food high in sugar, fats and oil.

[1]Anthony Gallo, John Connor & William Boehm, "Mass Media Food Advertising," National Food Review, Winter, 1980, p. 10

[2]Michael S. Lasky, The Complete Junk Food Book (New York: McGraw-Hill, 1977) p. 20

[3]Ibid, p. 24

[4]Ibid, p. 34 & 35

[5]Anthony Gallo, John Connor & William Boehm, "Mass Media Advertising," p. 11

[6]Michael S. Lasky, The Complete Junk Food Book, p. 12

[7]Ibid, p. xvii